The BULLETIN

American Society of Hospital Pharmacists

GERMICIDES

A Survey and Evaluation

DEPARTMENTAL ORGANIZATION

and Administration

CIVILIAN DEFENSE

A Committee Report

INDEX NUMBER

for Volume Seven

Rx VOLUME 7 NUMBER 6 NOVEMBER—DECEMBER 1950

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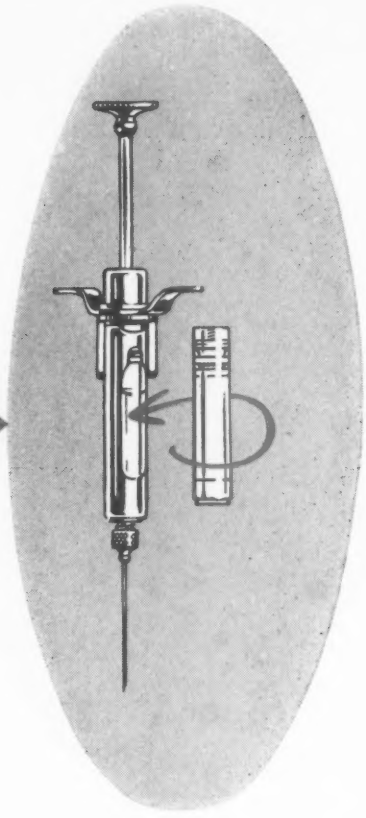

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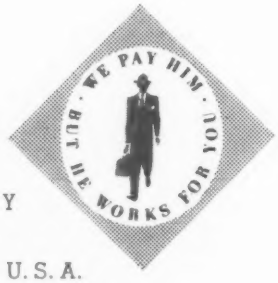

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The BULLETIN

American Society of Hospital Pharmacists

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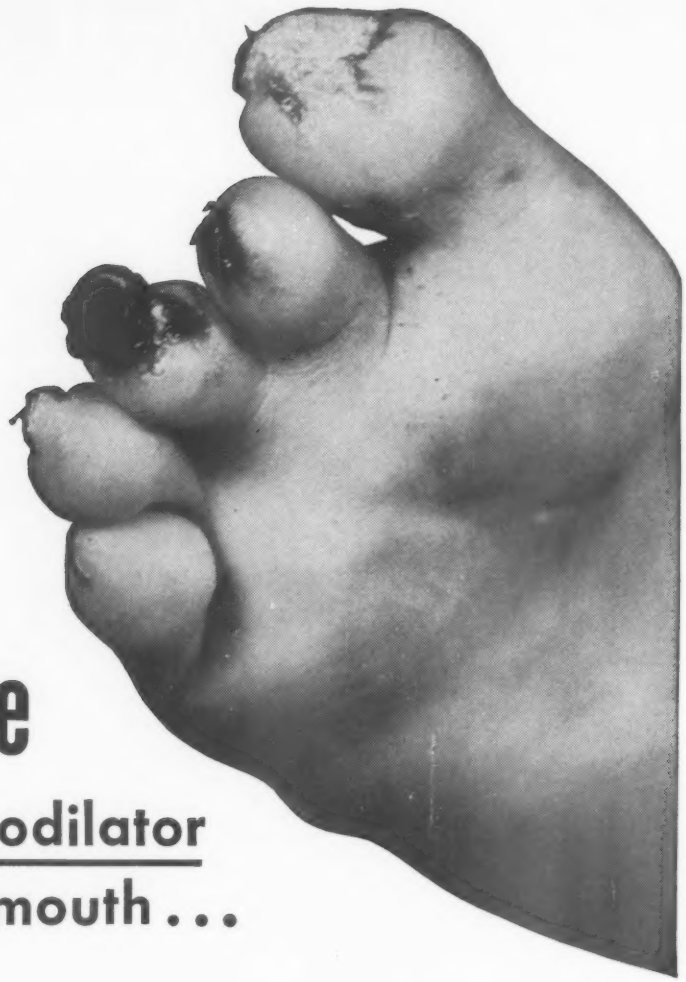

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Priscoline hydrochloride "has a definite place in the armamentarium of drugs...: particularly in the field of *peripheral vascular disease*, or for conditions of visceral pain due to vascular spasm. Presumably the drug can be used to a great advantage in those cases in which sympathectomy would be advantageous.... It can also be used as a substitute for paravertebral sympathetic block."[1]

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Comprehensive literature on request.

1. Rogers, Max P.: J.A.M.A., May 21, 1949
2. Wyatt, Bernard L.: Ann. West. Med. & Surg., Aug. 1949
3. Grimson, Marzoni, Reardon & Hendrix: Ann. Surg., 127:5, May 1948

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LETTERS

Prescription Legend Drugs

DEAR SIRS: Thank you for your warm welcome into the American Society of Hospital Pharmacists. I hope that I may prove to be a worthy member of an organization which has such noble purposes. As a newly registered pharmacist at a hospital which has not had a pharmacist during its fifty years existence, I would like to accept your offer to supply information on hospital pharmacy matters.

Could you tell me where to obtain a list of drugs or their parent substances that may not be dispensed without the written prescription of a physician? I did see such a list somewhere in St. Louis but I do not recall where. Requests for the type of drugs mentioned above occur often but are usually cared for after an explanation. The situation becomes more complicated when requests are made for such drugs as Prostigmine bromide, Urestrin, and *d*-tubocurare, which are the result of verbal orders being given by the physician. Do you have a statement or could you make a comment on such unethical practice?

SISTER ALMA, *R.Ph.*

St. Clement's Hospital
Red Bud, Illinois

Editor's Note: **We do not know of a list of drugs which may be dispensed without a prescription. According to the Food, Drug and Cosmetic Act, drugs which bear the prescription legend can be sold on the prescription of a physician only. Therefore, it is a violation of the law to sell such drugs over-the-counter, that is without a prescription. Prescription legend drugs are those which carry the manufacturer's statement "Caution: To be dispensed only by or on the prescription of a physician, dentist or veterinarian." At present it is the manufacturer who determines whether or not he wants to use the warning label. There is some confusion caused by the fact that some manufacturers formerly made use of the prescription legend on simple preparations such as zinc oxide ointment and boric acid ointment, whereas others gave directions which made it possible to sell them over-the-counter. Since 1946 it has been illegal for manufacturers to use the prescription legend on drugs which may be sold over the counter. It should be a cardinal rule for all pharmacists to obey the prescription legend if a drug is so labeled unless the pharmacist wishes to replace the manufacturer's label with his own label giving adequate directions for use. In such cases the responsibility for compliance with the law is, of course, wholly the pharmacist's.**

As far as we know, there is no current list of prescription legend drugs available. It is possible that the list you speak of is one which has been issued by a state Board of Pharmacy since some of the states have laws which list dangerous drugs which can be dispensed on prescription only, notably California, Pennsylvania, and others.

We believe that persons taking such drugs as you mention should receive them on prescription, and there should be no hesitancy on the part of either the patient or the pharmacist in requesting such from the physician.

You will also be interested in the current articles on prescription refills which are appearing in the *J. Am. Pharm. Assoc., Pract. Pharm. Ed.*

From An Administrator

DEAR SIRS: This is to express our appreciation for the assistance you have given us in our efforts to develop a formulary for this hospital. As a result of studying the formularies, our committee of medical staff members and the pharmacist have started working on a formulary, using the one of the Beth Israel Hospital in New York City as a model.

I am bringing to the attention of our pharmacist, who is also the purchasing agent for this hospital, the advantages of membership in the American Pharmaceutical Association and the American Society of Hospital Pharmacists.

ROBERT D. SOUTHWICK, *Administrator*
Concord Hospital
Concord, New Hampshire

Copies of Minimum Standard Available

DEAR SIRS: I understand from a recent issue of THE BULLETIN that copies of the *Minimum Standard for Pharmacies in Hospitals* are available upon request. Will you kindly send one to my administrator, Sister M. Raymond, superintendent, Holy Family Hospital, Manitowoc, Wis.

JOANNE BRANSON, *Pharmacist*
Holy Family Hospital
Manitowoc, Wis.

Internships in Hospital Pharmacy

DEAR SIRS: I am interested in hospital pharmacy and would like to receive a list of schools and hospitals offering an internship program.

JOSEPHINE M. MAR

2306 K Street
Merced, Calif.

Editor's Note: **The March-April (1950) issue of *The Bulletin* includes a list of both types of internship programs, the one leading to a Master of Science degree, which requires two years, and the non-academic program requiring one year.**

makes coughs

"productive"

productive of relief for the patient

BENYLIN EXPECTORANT relaxes bronchi, soothes irritated mucosa, fosters liquefaction of mucous secretions and relieves sneezing, lacrimation and nasal stuffiness.

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MEDICAMENTA VERA

EDITORIAL

The Hospital Pharmacist as an Executive

By Don E. Francke

If the hospital pharmacist is to assume his proper position in the highly organized modern hospital, he is faced with the necessity of learning and practicing fundamental principles of organization and administration. He must no longer be content merely to compound prescriptions, fill drug baskets, and to perform manufacturing, but he must recognize also the increasing importance of managerial or administrative functions and the necessity of coordinating the activities of his department with those of other units in the hospital. Because of the great importance of this subject to all hospital pharmacists, we have published two articles, the first "Fundamental Principles of Organization and Administration" appeared in the September-October issue of THE BULLETIN while in this issue is the second article "Principles of Departmental Organization and Administration." These are required reading for all who would make hospital pharmacy their career.

Organization and Administration

Hospitals are becoming increasingly complex as social and economic changes constantly expand the role of the hospital in modern society. Each of the specialties functioning within the framework of the hospital emphasizes more and more to its personnel the necessity of integrating their functions and activities with those of other units of the institution.

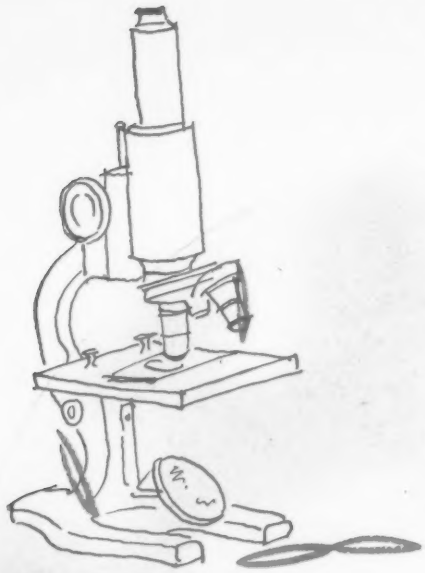
The mechanics of integrating functions and activities often poses a problem to those whose training has been in a scientific field. The pharmacist, as is true of others with scientific training, has been taught to deal with things. He is accustomed to handling things which can be measured, which react according to known laws, which are tangible and readily controlled. As an executive or department head, the pharmacist must make a transition which involves dealing with people as well as with things. His success as a department head depends principally upon his ability to make this transition, to deal with people whose viewpoints are constantly changing and who cannot always be depended upon to act or react twice in exactly the same manner.

Things vs People

It is upon his ability to deal with people that the hospital administrator can best judge the pharmacist as a department head. Accomplishments are made, ideas arise and plans are implemented only through working with others. Our complex economy is constantly encouraging and requiring individual work activities to become group activities. The pharmacist who can demonstrate his ability to work as a member of the hospital group, exercising leadership in his own specialty and exhibiting cooperation toward other units, is well started along the avenue of success as a department head. Those who ignore or neglect this phase of their position are certain to retard the development of their own department as well as their own advancement.

There are many instances in which the pharmacist is highly capable professionally, but where not sufficient thought or effort is given to develop the pharmacy department to its proper position in the hospital. Universal recognition of the importance of the duties and responsibilities of the pharmacist as a department head is the first step toward higher standards of practice in hospital pharmacy.

Recognize your role



A Survey and Evaluation of

GERMICIDES

By CARL A. LAWRENCE

IT MAY be well to point out in these introductory remarks that the title of the present subject is indeed comprehensive and the time allotted for this discussion does not permit a detailed account of a single phase of germicides and antiseptics. For this reason an attempt will be made to briefly touch upon several aspects of the subjects which may appear of current interest to you who have to deal with the many proprietary germicides that appear on the market today, and in particular to the pharmacists who are called upon to recommend one or more antiseptics for surgical and general disinfection.

CARL A. LAWRENCE, Ph.D., is assistant professor of Bacteriology at the University of Michigan, Ann Arbor.

* Presented at the Sixth Institute on Hospital Pharmacy, University of Michigan, Ann Arbor, June 19–23, 1950.

HISTORICAL

The ancients in biblical times practiced the art of preservation of foods and demonstrated their skill in the protection of corpses from decay by the use of dry salting, preservative oils, carbonate of soda, by dehydration and the use of vegetable gums and spices. The Persians also early knew that by storing drinking water in brightly polished vessels that there was less chance of encountering intestinal disorders that were attributed to the consumption of contaminated water. This latter practice we now know is the effect of ionic copper and other metals upon microbic life, or the phenomenon known as the "oligodynamic" action of certain elements.

In the early 19th century we have the introduction of the use of quicklime for the treatment of drinking water and for washing unclean walls and floors. Silver nitrate was used as early as 1832 for the cauterization of wounds, and by 1867 we find that sulfate of iron, carbolic acid, potassium permanganate and iodine solutions were being used for the treatment of inanimate surfaces and some were used directly on wounds or as chemotherapeutic agents. It is evident, therefore, that the practice of disinfection was long carried out without an emperical knowledge that microorganisms were the cause of putrifaction, decay and disease. While Semmelweis and Lord Lister are accredited with the introduction of aseptic surgery by the use of chlorinated lime and carbolic acid in surgical procedures, it was not until the development of the germ theory of disease by Koch and Pasteur that we find a rationale approach to the theories of disinfection and later the use of chemotherapeutic agents for treating microbial infections.

One of the first systematic studies carried out on the effects of chemical agents on pure cultures of pathogenic bacteria appeared in the publications of Koch in 1881 who used bichloride of mercury upon anthrax organisms. Since that time we have the development of the various classes of disinfectants which may be listed as follows:

1. Acids
2. Alkalies
3. Dyes
4. Coal Tar Derivatives
5. Halogens
6. Heavy Metal Salts
7. Oxidizing Agents
8. Aerosols (Glycols)
9. Sulfonamides and Related Compounds
10. Antibiotics
11. Surface-Active Agents
12. Physical Agents (X-rays, Ultraviolet)

DESIRABLE PROPERTIES

To review the prerequisites that we desire in a good disinfectant we can list these properties as one having:

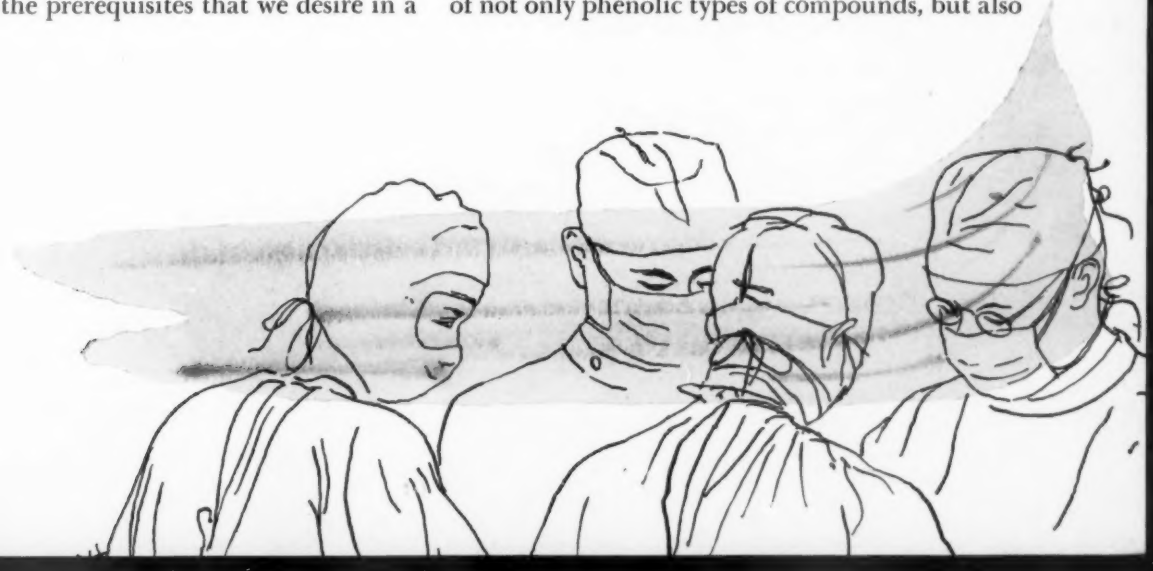
1. High Germicidal Activity
2. Stability
3. Homogenous Composition
4. Readily Soluble
5. Non-poisonous to Animal Life
6. Non-corrosive
7. Penetrating Power
8. Moderate Cost
9. Stimulates Healing
10. Absence of Irritating or Offensive Odor
11. Free of Objectionable Staining Properties

Although the ideal germicide has not yet been developed, an attempt is here made to indicate conditions under which several germicides are useful and to indicate conditions wherein their use is contraindicated.

EVALUATION OF GERMICIDES

Without going into a discussion as to the mechanism whereby chemical disinfectants destroy microbic life, let us briefly review the methods that are used to evaluate their germicidal activity. There are numerous test methods described in the literature for comparing the antibacterial effects of disinfectants. Several of these which are familiar to most of you are the *Rideal Walker Phenol Coefficient Test* which is still used in England; the *Hygienic Laboratory Phenol Coefficient Test* which was developed in this country; and the *Food and Drug Administration Phenol Coefficient Test* which is currently being employed by many laboratories in this country and is often referred to as the procedure described in "Circular 198 of the U.S. Department of Agriculture."

All of the tests mentioned use phenol as the standard for evaluating the germicidal activity of not only phenolic types of compounds, but also



those chemicals which are entirely unrelated to phenol. In this category we may include the pine tar disinfectants, halogens, surface-active agents, etc. We early recognized that the phenol coefficient testing of compounds, other than phenolics, will often give results that do not truly represent the germicidal value of the agent under test. Thus, the phenol coefficient should not be applied to the halogens, the mercurials and the surface-active quaternary ammonium germicides which are so widely used today. Insofar as an official test method that is acceptable by the Food and Drug Administration is concerned, there is none that is official with this agency, even that described in "Circular 198" which was set up by the Administration in 1931. Neither does the Food and Drug Administration intend to publish an acceptable *in vitro* method for determining the efficiency of antiseptics. The latter statement appeared in a report by Welch of the Administration which was written to the editor of *Chemical and Engineering News* **27**:1615 (May 30) 1949.

It is not to be inferred from the foregoing statement that the F.D.A. is not interested in controlling the efficacy and purity of chemical disinfectants that appear on the market. In the same letter to the editor of *Chemical and Engineering News,* Dr. Welch continues with the following remarks: "There is no single method described by this administration for determining the efficiency of antiseptics under conditions of use. Tests are based on the claims made for the product. As a matter of fact we no longer follow the method (198) as originally described, even for screening purposes. The use of loop for transfer of cultures has been discarded and not a single organism but 14 different organisms are used in the test. The *in vitro* tests are no good and are not reproducible. They do not give results which can be interpreted as to what they can do *in vivo*."

In the latter respect, many "Use Dilution," or *in vivo,* tests have been described for determining the value of disinfectants when used on animate and inanimate objects. Some of these procedures make use of chick embryos or embryonic tissues, whereas, others employ laboratory experimental animals. One of the latter methods is the test devised by Nungester and Kemp in which mice are used as the test animal. The tails of the animals are infected with a virulent culture of streptococcus or pneumococcus following which the tail is then dipped into the disinfectant under investigation. The tip of the tail is then cut off and inserted interperitoneally into the same animal. Survival of the animals from the respective infections is taken as an index that the organisms have been destroyed by the disinfectant.

"Use Test" conditions, more closely representing those encountered under actual practice are those reported by Walter who determined the presence or absence of viable bacteria in biopsy specimens of an operative site of patients following preparation with various disinfectants. From these brief remarks it is evident that there is no direct agreement of investigators in government agencies, educational institutions, or in pharmaceutical industries, as to the appropriate methods that should be used for testing the various classes of chemical disinfectants.

APPROACH TO EVALUATION

In devising a laboratory test method for evaluating surgical disinfectants, what are the prerequisites involved in their acceptance? Particular reference may be made to those agents that are to be employed for the cold-sterilization of optical instruments such as bronchoscopes and other appliances that have glass or mirrored surfaces imbedded in an adhesive or plastic. Heat sterilization cannot be used on these instruments because of the adverse effect of high temperatures upon the latter substances. Insofar as transfer of an infection from one patient to another by contaminated instruments with pneumococci, streptococci, staphylococci and other forms of organisms usually associated with the common surgical infections, we can adequately treat these conditions with the many chemotherapeutic agents we have available today. Furthermore, the organisms mentioned are readily susceptible to the germicidal action of the many chemical agents that are used in surgical procedures today.

One of the infections which, to date, has not been effectively challenged and overcome is tuberculosis. Thus, it is conceivable that the use of an improperly treated bronchoscope used in examining a patient with undiagnosed pulmonary tuberculosis, or a catheter used on a patient with urological tuberculosis, would present a potential source of contamination or infection in another patient not having tuberculosis. With this object in mind our laboratories recently devised a procedure which made sole use of a virulent, human strain of the tubercle bacillus to evaluate the 18 or more disinfectants that are dispensed by the pharmacy department to the many services of our hospital.

The test procedure may be described briefly as follows: Approximately 1 ml. of a pure culture of the recently isolated strain of the tubercle bacillus is placed in a sterile 15 ml. centrifuge tube. To the organisms is added 5 ml. of the disinfectant (as it is used in the same concentration in the clinic) and the latter thoroughly mixed with

the organisms with a sterile wooden applicator. The mixture is allowed to stand at room temperature for 10 minutes at which time the material is centrifugated for 10 minutes. The supernatant disinfectant is aspirated from the sedimented organisms, the latter resuspended in 5 ml. of sterile physiological saline solution and approximately 0.2 ml. added to each two tubes of Petragnanis' medium and 0.5 ml. injected intraperitoneally into each of two guinea pigs. At the end of one month and again at the two month period following inoculation, tuberculin tests are carried out on the animals and the Petragnanis' tubes examined for the presence or absence of colonies of tubercle bacilli. The animals are sacrificed at the end of three months and the various tissues examined grossly for tuberculous lesions.

RESULTS

In a preliminary series of these studies we were able to clearly demonstrate that approximately 50 per cent of the disinfectants in use in the hospital (at the time this investigation was made), failed to completely destroy the pure culture of tubercle bacilli which were suspended in saline solution. Of particular interest in this study, even though it may be merely a matter of coincidence, was the fact that a direct correlation was obtained in the percentage of infectivity of the animals and the presence of growth of the tubercle bacillus on the laboratory medium of those organisms that were not killed by certain of the disinfectants. Additional tests are in progress in which the organisms are first suspended in mucin, urine, serum and blood, before exposing them to the disinfectants that were found satisfactory as antitubercular agents in the preliminary studies.

SURVEY OF GERMICIDES

Turning now to a brief survey of the several germicides that are most commonly used today, we shall take these up in order of their introduction as antiseptics through the past years:

Chlorine—in the form of gas, or as hypochlorites are still widely used as general disinfectants and when properly used, are effective germicidal agents. Chlorine, in the form of Dakin's solution, was widely used during World War I in wound antisepsis; however, this disinfectant has been replaced by other chemical agents or antibiotics which are more effective in the presence of tissue proteins. It is doubtful whether chlorine will ever be replaced for the effective treatment of municipal water supplies. When properly used, with respect to *p*H and in the absence of large amounts of organic matter, the hypochlorites, or chlorine, are effective in treating inanimate objects. The hypochlorites are relatively stable at high alkaline *p*H, but are bactericidally effective only in the acid range of *p*H. Furthermore, evidence is available to show that the concentrations of "available" chlorine commonly found in municipal water supplies are not sufficient to destroy the cysts of *Endamoeba histolytica* and poliomyelitis virus. The chloramines are more stable than chlorine itself to *p*H changes, yet they are less active than the latter against bacteria.

Phenols—have a limited use as surgical disinfectants due to their extreme corrosiveness or toxic action to tissues. They are, nevertheless, still being employed by many for the sterilization of inanimate surfaces such as tables, floors, walls and other objects that have been contaminated with infectious materials.

Iodine—solutions, particularly in the form of tinctures, are still widely used as skin disinfectants and are unquestionably the most active skin germicides known. The principal objections to the use of iodine are that it results in undesirable staining of fabrics; it is irritating to tissues and thus painful to the patient; certain individuals manifest a marked sensitivity to it; and iodine alone is relatively insoluble in water. Tincture of Iodine, U.S.P. XIV, which is made with sodium iodide, instead of potassium iodide as found in the former Tincture of Iodine, U.S.P., appears to be less toxic than the latter and will cause less dehydration or coagulation of red blood cells and tissue proteins.

Bichloride of Mercury—was first studied by Koch in the 80's and is still being widely used to treat inanimate objects, despite the fact that Geppert in 1889 demonstrated that much of its activity was bacteriostatic in nature rather than bactericidal. In our laboratories a 1:1,000 solution of bichloride of mercury has been used routinely for a period of more than 50 years by the students without a single instance of bacterial infection which could be attributed to improper disinfection with the solution in treating or handling infected animal tissues or pathogenic microorganisms. The principal objections to the use of solutions of the compound are that they show an extreme corrosiveness to metals and many individuals manifest a chemical sensitivity to the compound.

Organic Mercurials—were introduced as germicides in the early 30's and are still the disinfectants of choice of many physicians as general and and surgical disinfectants. As with bichloride of mercury, the activity of this group of compounds has been shown to be one of bacteriostasis rather than actually killing microorganisms. The organic mercurials are compatible with many drugs that are administered parenterally and for this

reason they are being widely used as preservatives for those solutions that are packaged in multiple-dose containers. Morton and others have demonstrated the high bacteriostatic activity of the organic mercurials. These workers caution that sole reliance should not be placed upon these compounds where complete destruction of bacteria is desired. Much of the activity of the tinctures of mercurials can be attributed to the alcohol contained in the solutions.

Alcohols—have been extensively used to prepare the skin for injections and in surgical procedures. Price has indicated that 70 per cent alcohol is superior in germicidal activity to aqueous solutions of mercurials and surface-active quaternary ammonium antiseptics. This investigator found that the addition of the latter compounds to 70 per cent alcohol may even decrease the germicidal efficiency of the alcohol. This observation should warrant confirmation by others before we abandon the use of tinctures completely.

Cresylic acid—(Lysol) types of disinfectants have been effectively used as general sterilizing solutions and are particularly destructive for the tubercle bacillus. They cannot be relied upon, however, to kill bacterial spores, even when used in concentrations as high as 5 per cent. Small amounts of soap will increase the germicidal activity of cresols (also phenols); whereas, excessive amounts of soap will interfere with their action. Cresylic acid disinfectants have a limited value in the destruction of filterable viruses. The compounds present odors which are often objectionable and for this reason cannot be employed in those instances where they may come in contact with foods or eating and drinking utensils. Cresols have been used effectively as preservatives for vaccines, antisera and certain pharmaceutical solutions.

Formaldehyde—is bacteriostatic in high dilutions. Evidence is available to indicate that the agent is more germicidal than phenol and lysol. A 5 per cent concentration of formaldehyde will kill many bacterial spores in a period of an hour and it is effective in relatively large amounts of organic matter. Formaldehyde has been extensively used to sterilize tubercular sputum and still appears to be the germicide of choice of many for the sterilization of suture materials, surgical and dental instruments.

Dyes—such as acriflavine, proflavine, gentian violet, etc., were early used as skin disinfectants and in some instances as chemotherapeutic agents parenterally. The activity of the dyes is mainly one of bacteriostasis and their use is chiefly confined to the treatment of oral or urological infections.

Surface-Active Quaternary Ammonium Germicides—were introduced in this country in 1936 and soon gained wide popularity as general and surgical disinfectants. An indication to the extent of their use may be had from a report by Price who found that approximately 50 per cent of the hospitals in the country were using the solutions for preparing patients for operative procedures. In addition to the latter, approximately 14 per cent of the surgeons were using the compounds for surgical scrubs. The quaternary ammonium germicides are of interest in that they not only exhibit germicidal activity, but surface tension depressant action as well. Part of their activity can be attributed to their low surface tension properties.

The quaternary ammonium germicides are primarily derived from animal or vegetable oils. They are composed of hydrophilic and lipophilic groups in which one of the components consists of a long chain alkyl group with carbon lengths of C_{10} to C_{16}. Three of the compounds are listed in *New and Non-official Remedies* (1949), and one in the 13th edition of the *U. S. Pharmacopoeia* (Benzalkonium Chloride). Most of the confusion existing today on the phenol coefficient testing of germicides is the result of the test on these compounds which show unusually high phenol coefficient values.

To list a few of the advantages of the quaternary ammonium germicides, they have been found to be stable to light, temperature changes, and to storage or aging. Many of the compounds are non-volatile, odorless, non-irritating, non-staining and appear to be equally active against Gram-positive and Gram-negative bacteria. In relatively high concentrations, the surface-active quaternary ammonium germicides are destructive to viruses, protozoa, and the tubercle bacillus.

The principal disadvantage to the use of these compounds is the adverse effects that soaps have upon their germicidal activity. However, with proper precautions they can be used effectively in most instances where disinfection is required. They are employed as general disinfectants in food processing plants and in eating and drinking establishments. The quaternary ammonium germicides are used in presurgical scrubs, for the treatment of skin lesions, burns and abrasions, for the irrigation of wounds of the bladder in certain bacterial infections. They have been relied upon for the sterilization of clean surgical instruments, and in particular, optical instruments and synthetic rubber tubing, or plastic, which may be adversely affected by boiling or autoclaving.

Quaternary ammonium compounds are used extensively in combination with antibiotics in

the aerosol therapy of respiratory infections to increase the penetrability of antibiotic agents. In ophthalmology, the compounds are used to enhance the penetrability of ophthalmic drugs into ocular tissues. Use is also made of quaternary ammonium germicides as preservatives for the latter drugs, with which many of them are compatible. One must bear in mind, that the list of chemicals with which the quaternaries are incompatible, is almost as long as the list with which they are compatible. Thus, it is highly desirable to be familiar with the chemical nature of the drug with which the quaternaries are to be combined.

Synthetic Soaps—of the anionic type (Tide, Surf, etc.) show less germicidal activity than that of the cationic surface-active agents (quaternary ammonium compounds). Furthermore, they are mainly effective against Gram-positive bacteria. There is some evidence that the anionic compounds will lyse pneumococci in a similar manner as bile salts. However, the anionic surface-active detergents are seldom used as general or medicinal disinfectants.

Non-ionic Surface-Active Agents– (Glim, Hyamine, X-100, etc.) are appearing on the market as soap substitutes, but these compounds exhibit little, if any, germicidal activity. This class of wetting agents, or detergents, can be used as solubilizing agents in formulations wherein the quaternary ammonium germicides are incorporated with other drugs.

Germicidal Soaps—have been available for many years, although their use had been abandoned up to within approximately two years ago. Since that time we note a renewed interest in these products, particularly in the form of hexachlorophene (G-11) in solid or liquid soap preparations. In the latter instance, evidence is available to indicate that the liquid soaps containing hexachlorophene are far superior to the solid (bar) soaps containing the same compound. Hexachlorophene is chiefly a bacteriostatic agent and not appreciably bactericidal. There appears to be some affinity of the compound to the skin in the form of a monomolecular film which prevents the multiplication or growth of microorganisms. Maximum effectiveness is obtained by use of hexachlorophene soaps only upon continued or repeated use of the products. The chemical is at present being incorporated in cosmetics, shaving creams and deodorants.

SUMMARY

In summarizing this brief survey of antiseptics and disinfectants it should be pointed out that we still lack the "ideal" antiseptic which shows maximum effectiveness under all conditions of use. An attempt has been made to indicate the conditions under which several of the classes of disinfectants can be used, as well as, conditions wherein they are contraindicated. One must be guided in the proper selection of an antiseptic by becoming familiar with the chemical constitution of the compound, its toxicity and germicidal action under actual conditions of use.

President of the Japanese Pharmaceutical Association Visits V. A. Hospital

Dr. Tatsuo Kariyone, president of the Japanese Pharmaceutical Association and a member of the faculty of the Pharmacy Department of the Medical College of Kyoto University, Kyoto, Japan, visited the Mt. Alto V. A. Hospital Pharmacy accompanied by Mr. E. Burns Geiger, director, Pharmacy Service of the Veterans Administration during his recent tour in the United States.

Mr. Eddie Wolfe, chief pharmacist and Mrs. Katie M. Lim, pharmacist, for the Mt. Alto Hospital escorted Dr. Kariyone through the pharmacy department showing him the latest pharmaceuticals, equipment and up-to-date pharmacy library consisting of a complete drug index and journal excerpts on the latest drugs.

Dr. Kariyone was introduced to Dr. Robert Stolar, consultant dermatologist for the Veterans Administration, who was in Japan six months ago with a commission of physicians to study and recommend new drugs for use in Japanese medicine.

LEFT TO RIGHT: *Mr. E. Burns Geiger, director, Pharmacy Service, Veterans Administration; Dr. Tatsuo Kariyone, president of the Japanese Pharmaceutical Association; Mrs. Katie M. Lim, pharmacist, Mt. Alto V. A. Hospital and Mr. Eddie Wolfe, chief pharmacist, Mt. Alto V. A. Hospital.*

SKIN HYGIENE

in the Hospital Environment

By VERONICA LUCEY CONLEY

THE peculiar environmental hazards of hospital personnel and patients require that hospital pharmacists understand the importance of maintaining the maximum functional effectiveness of the skin at all times. This protective organ is the body's first line of defense against such undesirable exogenous materials as microorganisms, viruses, irritants and sensitizers. Inasmuch as the consequences of an impaired cutaneous surface can be serious, it is necessary that all phases of good skin hygiene be understood. Accordingly, the anatomic and physiologic characteristics responsible for the skin's protective function, their limitations in the presence of certain occupational hazards associated with hospital environment, and the measures which may be used to circumvent or modify unfavorable reactions are briefly reviewed.

SKIN'S PROTECTIVE FILM

The outermost natural boundary in the protective mechanism between man and his environment consists of a greasy layer composed mainly of waxes and cholesterol esters. It is secreted onto the cutaneous surface by the apocrine and eccrine sweat glands and the sebaceous or oil glands. This film is not impermeable although it will hinder surface wetting thus delaying penetration. To affect this organ, a substance must first wet the surface and then react chemically with skin constituents or physically through extraction of moisture or fat. Water, being miscible with waxes and cholesterol esters will penetrate the skins keratinized layer after prolonged contact. The perme-

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ability of aqueous solutions is also increased as the temperature rises and with deviations of the *p*H from the isoelectric point of the skin (*p*H 3.7). Lipoid solvents such as ether, chloroform and alcohol break up the greasy surface barrier and render the skin more vulnerable.

Perspiration excreted onto the skin's surface also acts in a protective capacity. Under normal circumstances, it serves as a diluent for external irritants and contributes towards maintenance of surface acidity. This "acid mantle" of the skin is generally regarded as the optimum reaction of the skin's surface, although the role that it plays in the overall protective mechanism is still a subject of controversy. Available evidence suggests that it possesses some degree of bactericidal and fungicidal activity.

The body's next line of defense is formed by the keratinized cells of the epidermis which represents the progressive degeneration and ultimate death of normal epithelial cells. These surface cells of the skin are chiefly composed of proteins (principally keratin), lipids and water. They are soluble in water and alcohol, resist the effects of moderately strong acids but are attacked by alkalies and sulfides. The most vulnerable areas are the pores which are opening on the skin's appendages, the gland ducts and hair follicles. These openings are an anatomic weakness in the skin's outer covering. Exogenous substances are able to pass from the pores through the sweat and sebaceous gland ducts to the absorbing surfaces of the gland cells, from which the blood stream is easily entered. By this pathway a substance is not required to pass through stratified epithelium, but proceeds through canals filled with air to more permeable cell membranes. Substances which do not enter the pores because of insufficient wetting and because of air blockage of the ducts, may penetrate with the aid of massage. This compresses the air in the duct facilitating absorption through the gland cells.

There are a number of other factors which exert varying degrees of influence upon the protective capacity of the skin. General physical condition reflects in the functional efficiency of the skin. Age and sex influence to a slight degree resistance to certain specific external irritants. Reactions to outside factors may also vary with different people and in various body areas of the same person. In general, the face, neck and flexor surfaces of the arms are regarded as areas most susceptible, while the palm and soles are most resistant. The most seriously detrimental factor in the skin's ability to protect is a frank break in the continuity of the epithelium. This removes all barriers to external substances and permits their direct entry into the blood stream.

FACTORS IN SKIN CLEANSING

Knowledge of the physiology and structure of the skin engenders respect not only for its protective capacity but also for its deficiencies under certain conditions. With such facts in mind, those elements in the particular environment which threaten the integrity of the healthy skin may be evaluated, modified and countermeasures adopted. The hygienic principles of cleanliness through frequent handwashing which is emphasized in hospitals can constitute an occupational hazard. This is due in many instances to failure in recognizing the limitations of available cleansing agents and to neglect in practicing proper skin hygiene.

The ideal cleansing agent, which would act selectively on the skin "soil," is yet to be developed. It would, for example, remove such exogenous material as cosmetics, topical medicants, airborne materials, microorganisms and other environmental substances. On the other hand, it would remove only that part of the skin's normal mantle consisting of sweat, sebum, and desquamating epidermis as has been contaminated by exogenous materials or had undergone undesirable chemical alterations. Sweat and sebum are often mistakenly regarded as soil to be removed. On the contrary, they contribute towards maintaining skin suppleness, and towards protecting against microorganisms and certain chemical contactants.

In an effort to develop a detergent more nearly approximating the ideal than soap does, various types of cleansing agents have been formulated. Their success can be measured to some degree by the continued almost universal popularity of soap for skin cleansing. Neutral, white, lightly perfumed or non-perfumed soap is probably the most widely used detergent in hospitals. It possesses two properties which most persons have come to associate with efficient cleansing—foaming ability and cake form. While the latter is sometimes sacrificed to accommodate the needs of hospital personnel, patients are usually more satisfied with cake soap.

SOME PROBLEMS WITH SOAP

In conjunction with its many desirable properties, the use of soap presents a unique problem. It not only defats the skin which is probably true of all equally efficient cleansers, but it also alkalinizes the skin surface. For these reasons and perhaps others, there are a number of persons on whom the use of soap is contraindicated. Authorities have for some time been attempting to discover the exact cause. They agree that soap hy-

drolizes and becomes alkaline in solution, thus to a degree interfering with the normal acid mantle of the skin. The concensus is that this action causes some alkali damage which paves the way for irritation or sensitization to some other soap ingredient such as fatty acids, the filler, perfume or dye.

In an attempt to overcome the characteristic alkaline reaction of soap in solution, products have been formulated with chemically equivalent amounts of alkali and fatty acids. While this results in a neutral product, it does not prevent the neutral soap from hydrolyzing in solution with a basic reaction. Efforts have also been made to offset the defatting action of soap by adding an excess of fat or oil in the formulation. This is intended to enable the detergent to lubricate while cleansing the skin. Manufacturers however are limited in the degree to which they can superfat or superoil, because of detrimental effects on the lathering properties. Soaps which are marketed as superfatted soaps, superoiled soaps, cold cream soaps, lanolin soaps, and similar types enjoy some popularity in spite of the fact that their efficiency is not clearly established. Lane and Blank (Cutaneous Detergents, *J.A.M.A.* **118**:804, (March 7) 1942) have probably best summarized the situation with the comment "The object of cleansing is exactly opposite to the object of 'lubricating' the skin and it does not seem that the two processes can be successfully carried out in the same operation."

SOAP SUBSTITUTES

For the cleansing of diseased skin in which the use of soap is contraindicated, soap substitutes have been developed. Sulfonated oils and alcohols are widely used for this purpose. These products cleanse satisfactorily and do not seem to defat to the same degree as soap. Furthermore, they do not interfere with the acid mantle since they are approximately neutral in solution. They are likewise equally adaptable to either hard or soft water. However, these products lack certain desirable properties which have popularized soap as a detergent. It appears that at least for the present, soap substitutes will replace soap for skin cleansing in certain limited areas only.

PROPER USE OF SOAP

If the undesirable properties of soaps are recognized, the reactions which they may bring about can be circumvented. Many authorities claim that the vast majority of complaints due to soap could be avoided by proper skin hygiene. Measures which have been suggested to ensure maximum cleansing efficiency and minimum skin damage are:

1. Type of Soap	A white, neutral lightly or non-perfumed toilet soap is the most suitable for hospital use. Dyes, perfumes and excess alkali which might sensitize or irritate are thus avoided.
2. Water Temperature	Lukewarm water is to be preferred to water of high temperature because of the latter's defatting action. The skin's protective mantle of waxes, cholesterol esters and the keratin layer are more easily penetrated by hot water.
3. Type of Water	The use of soft water is advisable if possible. There is some evidence that a precipitation of the insoluble calcium and magnesium soaps which form in hard water solutions may prolong the time the cutaneous surface remains alkaline after washing. This precipitate of insoluble salts may cause a dry feeling, sometimes accompanied by itching.
4. Soaping Technic	Do not massage soap into skin. This may cause a penetration into the glandular and follicular canals and bring soap constituents in contact with sensitive gland cells.
5. Rinse	Perhaps no part of the washing technic is as important as thoroughly removing all soap. Generous amounts of water will mechanically flush away any residual irritant ingredients in the soap.
6. Drying Procedures	If paper towels are used it is advisable that they be of soft texture and that moisture be removed by blotting motion rather than by rubbing. A coarse surfaced towel can mechanically defat and abraid the skin. Dry hands thor-

	oughly paying particular attention to the surfaces between the fingers.
7. Emollients	Apply an emollient hand cream or lotion. This will supply a temporary protective fatty film until such time as the skin can regenerate its own oils.

SKIN CLEANSING IN HOSPITALS

The problem of skin cleansing is a particularly serious one for the staffs in operating rooms, isolation units and nurseries. The use of a brush for scrubbing purposes in the preparation of the hands for surgical procedures places an added stress upon the skin. Excessive perspiration under the rubber gloves worn during surgery increases the tendency toward maceration of the cutaneous surface. These factors are of no little importance in guiding the choice of cleansing agents for these hospital units. Caution should be exercised in accepting a new cleansing agent for operating room use unless there is sufficient evidence to indicate a low irritant and sensitizing index. The conditions under which the staff members work cannot be regarded as normal or average and their threshold of resistance can be expected to be lower than that of the general public. Employees in nurseries and isolation units where frequent hand washing is the rule will also find it necessary to pay particular attention to skin care. An excellent supplement to the hand washing procedure is an emollient cream or lotion, which should be provided for these personnel.

It is hoped that this review will promote a better understanding of the principles of skin hygiene as they are applied to the specific problem of skin cleansing. In a similar manner these principles can serve as guideposts in instituting preventive measures to offset the actions of other potentially offending substances in the hospital environment.

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AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE MEETING

The American Association for the Advancement of Science will meet in Cleveland December 26-31. The Pharmacy Subsection of the Medical Sciences will hold four sessions Thursday and Friday, December 28 and 29 for which Dr. Glenn L. Jenkins, dean, Purdue University School of Pharmacy is chairman and Dr. Albert M. Mattocks, director of the laboratories of the American Pharmaceutical Association is secretary.

Drs. Jenkins and Mattocks will preside at the Thursday sessions at which papers will be presented including a variety of scientific pharmaceutical topics such as vitamin stability studies, isotope dilution analysis and Khellin studies.

The Friday sessions will be devoted to a hospital pharmacy seminar at which Mrs. Evlyn Gray Scott, chief pharmacist, St. Luke's Hospital, Cleveland and Mr. Don E. Francke, chief pharmacist, University Hospital, Ann Arbor, Mich. will preside.

A panel discussion will be presented at the Friday morning session on "The Responsibilities of the Pharmacist in Civilian Defense." This discussion will be supplemented by Army films on "The Medical Effects of the Atomic Bomb" and "Medical Services in Atomic Disaster."

The Friday afternoon session will include the following: "The Importance of Amber Glass for Prescription Containers" by George F. Archambault; "Recent Developments in Pesticides" by Bernard E. Conley and "The Significance to the Pharmacist of a Cosmetic Evaluation Program" by Veronica L. Conley. Also on the program will be a paper on "Some Factors in Establishing a Laboratory for Radioactive Materials in the Hospital Pharmacy" by J. J. Pinajian.

The sessions will be held in Parlor C of the Cleveland Public Auditorium, beginning at 9:30 A. M. and 2:30 P. M. The Hollenden Hotel has been designated as headquarters for the Pharmacy Subsection.

By PHILIP J. OLIN

Principles of

Departmental

Organization and Administration

within the Hospital

MY ASSIGNMENT in this program is to consider the same general theme of fundamental principles of organization and administration as outlined for you by Mr. Pierpont * and to emphasize the departmental level in the hospital.

I should like to divide this discussion into two parts:

1. To establish and limit our field of discussion by statements and examples in the general area of our subject.
2. To apply the principles of organization and administration to a hospital department.

In the very beginning let us be sure all of us are considering our subject in the same light. What do the words "organization" and "administration" mean to us? Are they synonymous and can they be discussed as one? Is it possible to have efficient departmental administration without having organization? If we cared to take the time for open debate on these questions, probably we would come up with definitions something like these:

Administration is the art of directing and inspiring people. In other words, administration is *leadership.*

Organization is the art of relating specific duties or functions. This is a form, a framework or a guide, but should not be confused with the organization chart. The organization must first be conceived and planned, then it is charted. The chart is only the picture or the working drawing" of the producing organization and must include administration.

Both of these so called "arts", then, must be present to insure an efficient, smooth working department. Each has its place and each is closely dependent upon the other. One is concerned with the work to be done – the other with the people who are to accomplish that work. Perhaps we should bracket these two, (below) to give visible proof of their alliance which can be pictured in the organization chart.

ADMINISTRATION	ORGANIZATION
Leadership	*Framework*

ORGANIZATION CHART

It seems apparent that while administration and organization are not synonymous they are so closely interwoven as to be inseparable. Someone has said that administration always presupposes something tangible to administer and this something is supplied through organization.

Much has been said and volumes written on these subjects, but I am sure each of you knows of individuals who either fail to comprehend their importance or do not know how to apply

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Presented at the Sixth Institute on Hospital Pharmacy, Ann Arbor, Michigan, June 1950.

* Pierpont, W. K.: Fundamental Principles of Organization and Administration, *Bull. Amer. Soc. Hosp. Pharm.* 7:273 (Sept.-Oct.) 1950.

the principles. Yet they would no doubt willingly agree that any department or other association of people must have leadership and some plan of action if the individuals are to accomplish the most with their abilities and time.

Not long ago I had occasion to be concerned with a department in a certain hospital that had been functioning with more or less success for a great many years. Very suddenly it was without a department head. Then, within a comparatively short time, chaos reigned! Argument, grievances and open revolt was the order of the day. Apparently, that department head was the administration *and* the organization. In this case they were synonymous! He was a very strong character and ruled with an iron hand—a hand that held all the reigns. What seemed to be organization proved to be domination. But the importance of this reference for our purpose lies in the fact that with the removal of the leadership and any directed plan of action the department literally fell apart. Mr. Pierpont spoke about the delegation of responsibility and authority necessary in good organization. This illustration is further proof that such delegation is of prime importance. Had this delegation been honestly done, the department would have continued at the same level of operation.

We could point out numerous examples of this sort which seem to indicate that a *poor organizer can rarely become a good administrator.* I suppose he might "get by" if he had someone available to do the organizing, but I doubt it. It isn't enough that a unit is just well organized, but rather that the administrator or department head must think. He must think in terms of that organization, the work must be planned, assignments made, authority and responsibility delegated—all in the order prescribed by that organization.

Two of the fundamental principles discussed by Mr. Pierpont were: "The need to subdivide or departmentalize a large enterprise into working units which have *specific* and *definable purposes.*" I want to call your particular attention to the latter part of that statement—"working units which have specific and definable purposes," that is, a unit or department with its objectives clearly stated and well understood by all concerned. The second principle is: "The need for a complete understanding of the relationship existing between the individuals of the department and all other departments." It seems to me that these two principles disclose the very essence of organization and administration in pointing up the essential need for:

1. Common understanding of the objective or a specific definable purpose.
2. Coordinated effort.

In fact, it has been said that coordinated effort is the "sum total" of organization.

A very simple illustration will suffice to emphasize these points. Two men unite their strength to move an object too heavy for either one to move alone. They are explicitly instructed as to the final location of the object and the route to follow in its movement. Thus, all persons concerned have a common understanding of the objective. It is not merely the uniting of strength that will produce the desired result, but the coordination of that unity or that effort. These two men of brawn can get together, but if one pushes in one direction and one in another, the effort is wasted. Again, if one pushes while the other is relaxed, still nothing is accomplished. But, when they push together and in the same direction, then, and only then, is the objective reached. Thus, in arriving at our departmental level of organization and administration we have accumulated a sizeable obligation: leadership that can establish a framework for the accomplishment of specific and definable purposes or objectives that are commonly understood and will insure coordinated effort.

Let us take a look at a well functioning department, and I suggest we could do no better than to inspect a hospital pharmacy. Here is one that has its objective in writing:

> To coordinate the best abilities of each of us to be prepared to satisfy the needs of the patient for medication and other pharmaceutical supplies; to foster cooperation and understanding with the medical, nursing, and other departments or units to the betterment of the services offered by the hospital.

That certainly would do for the over-all departmental objective. It is broad and inclusive as any general statement must be. However, it does give a "back-bone" and a guide to the departmental organization and a correlation to the more detailed objectives of the work of the various units or individuals in the group. For examples of the detailed objectives, I refer to that section of your own *Minimum Standard for Pharmacies in Hospitals* that is headed, "Responsibilities." Each and every one of the fifteen items listed is an objective in itself. I might read a few to clarify my statement:

> "The pharmacist in charge shall be responsible for the preparation and sterilization of injectible medication when manufactured in the hospital, the manufacture of pharmaceuticals, the dispensing of drugs, chemicals and pharmaceutical preparations, the filling

and labeling of all drug containers issued to services from which medication is to be administered, necessary inspection of all pharmaceutical supplies on all services, furnishing information concerning medications to physicians, interns and nurses."

Objectives should be carefully and studiously prepared. The words used should be checked for any hidden or unrelated meaning that might confuse or obscure the desired interpretation. Each objective should also be questioned from the point of view of being exclusive to your department or unit. If another group of other personnel do the same or similar work or as easily fulfill the objectives you have listed, then it must be discarded for these "purposes," you will recall, must be "specific and definable." As an example I remember two departments that continuously argued over the problem of which one should be responsible for the transportation of patients. Each knew that it was an essential part of the complete operation. Each claimed it was a duty and objective of the other. I suspect this debate still ensues for the last I knew neither had been given specifically that responsibility as an objective of its organization or administration.

So far we have discussed the general idea of organization and administration and how these two are related and closely interwoven. We have spoken of at least two of the fundamental principles of organization and administration in an effort to show why and how they should be considered, as well as the importance of coordinated effort and a common understanding of the objectives that have been carefully established.

METHODS OF ACCOMPLISHMENT

We should also determine some methods of accomplishing all this and then lastly an answer to the question, "How am I to measure progress and success in my efforts in organization and satisfactory administration?"

You people are familiar with pharmacies in several different types of hospitals—some with closed staffs, other open; some are large, others small; some are general, others specialized—so you know that the methods used successfully in one may not necessarily fit another. Nevertheless, there are many that in a broad sense, at least, will be applicable to any situation. The details may be different but the outcome, the finished product, should coincide. For instance, what about the pharmacist's concept of his own job? Is the hospital pharmacy any different than any other pharmacy practice? Do you consider that the hospital pharmacist is of a professional rank? I am quite sure these questions must be answered in the affirmative and emphatically too. Your reasons for this answer would no doubt be from a technical point of view. Mine, from an interest in personnel and in good organization and administration, would lay the stress on a different angle— the *relationship* that must exist between pharmacy and the other departments and personnel through whom you reach the patient. The administration of your department must be coordinated with the responsibilities and efforts of those closely related departments and their personnel.

You are the department head of a very important and professional group. You must never think otherwise. Recall the saying, "As a man thinks so is he."

As the pharmacist and department head you are ever the example that your subordinates will follow and imitate—you "set the pace." In the words of General Summerall, the past chief of staff of the United States Army, "The leader must be everything that he desires his subordinates to become." I suppose that true understanding and teamwork are the two areas in which you must do the greatest amount of education. Complete and broad understanding is difficult to master. All of us tend to make snap judgments which do not often lead to good relationships—either inter- or intradepartmental. Have you ever thought much about the word "understanding?" It connotes a great deal of meaning and is frequently used too lightly for it implies a thoroughness, an analysis, a consideration of all angles. We cannot dwell long upon this idea of understanding before we are led into the field of human relations and if there is any concept that is more important and yet so often relegated with the unimportant; more deserving of the first place in our attention but usually left unnoticed—that concept has yet to be developed. So many rough spots could easily be ironed out, in fact, would never come into existence, if the individuals or groups concerned would only take the time to practice good human relations, and would make a real effort to understand each other, the situation, and the cause.

For example, I wonder what usually happens when the drug baskets are not down from the floors on time or certain medications are incorrectly ordered? Of course, I do not know what you people would do, but there are folks who would "burn the ears off" the nurse over the telephone. Such tactics were never meant to be of assistance in this field for good relationships. Too few individuals will take the time to explain to the offending person the reasons for the requirements. The psychologists have worked out an interesting little formula to guide us in con-

sidering situations like this: S→O→B= A (and this is not the same formula that recently concerned Mr. Truman): *Stimuli* applied to an *Organism* determines the *Behavior* or attitude that results in *Accomplishment*. If we want to alter the accomplishments of an individual we must change the stimuli or the cause. In other words, if things are not going right, find the cause and change that. So, in the case of the late drug baskets, the pharmacist should consult with the nurse, the nursing supervisor and the Nursing Department head, if necessary, not from the point of view of laying down the law, but to determine the cause for the late baskets and then to proceed as a matter of education of the persons concerned to show how they can obtain better service if the baskets are received by the time requested. One satisfactory method is to bring the offenders into your department to observe the established procedure and system and show how it affects them. This procedure of changing the stimulus is not easy and you will not get much personal satisfaction from it at first. Later, though, when the baskets do all arrive on time you will know it has been worth the time and effort.

TEAMWORK

Another method of improving organization and administration is to develop a high degree of teamwork. Here your job descriptions will help by concentrating your thinking on ways and means of better production.

The pharmacist is in a peculiar position in the institutional organization since he has both line and staff functions. Your department, as a unit, is primarily a staff group to serve the patient through others. You advise. You counsel. You suggest. In addition, however, you make binding decisions in pharmaceutical matters and you must have a say in the overall planning; such duties are ordinarily reserved for line positions. Nevertheless, whether your place in the organization is charted as staff or line you have very definite responsibilities to your hospital administrator and some of the most important ones are never written out for your edification. Not the least of these is to keep him informed concerning your department, not only its problems and its needs but also its achievements.

Somewhere and somehow I have picked up the impression that many pharmacists bewail the lack of sufficient space, adequate equipment and enough personnel. Perhaps in that respect you are not so different from many another department head. But how do you present your requests to your administrator? Do you visit with him in the corridor or even in his office in some such manner as this—"Say, Chief, I wonder if we can't chisel some more space. You know we are very crowded, I can't really say why, either. Seems to be just more work all around, etc., etc." Compare that method, which, by the way, is honestly the one used far too often, with one that might go something like this after a definite appointment has been made with the administrator. "Chief, the time has come when we must do something about additional space for your Pharmacy Department. Here are some figures that amply justify our request. Look at these concerning the number of prescriptions filled, for instance. I've shown a comparison of the last three years and related them to the hospital census, both inpatient and outpatient services. You will note that the numbers of prescriptions filled has increased much faster than even the increase in patient visits, etc., etc." If you were the administrator, which of these requests would you be most likely to consider seriously?

VALUE OF RECORDS

In other words—how are your records? Can you justify your costs? Do you know the number of prescriptions filled last month and last year? What and how much was manufactured last year and at what cost? Do you need the amount of personnel you now have? Can you prove it?

Of course, the answers to these last questions are found in specific organization and job descriptions or specifications. I noticed in one of the recent issues of your BULLETIN some fine examples which the author called "Work Schedules"—here is one: *

TECHNICIAN—CLERK I

1. Assists pharmacist in manufacturing and compounding.
2. Washes containers, utensils and equipment.
3. Sterilizes bottles and equipment under supervision.
4. Prepares simple solutions of five-gallon stock under direct supervision of pharmacist.
5. Dilutes and labels all penicillin and streptomycin. (This takes one hour daily on three to four days a week.)
6. Labels and date-stamps all sterile solution containers.
7. Receives and checks all purchase orders upon arrival.
8. Records received items in purchase file, noting source, amount, and cost.

* Frazier, W.: Reorganizing the Hospital Pharmacy, *Bull. of the Amer. Soc. Hosp. Pharm.* 6:220 (Oct.- Nov.) 1949.

9. Maintains cleanliness of manufacturing room and basement storage room.

There isn't much doubt that this pharmacist knows what his people are doing and how their work day is occupied; nor that he has the work well organized and distributed. Incidentally, if any of you have job descriptions in process may I warn you to beware of a rather common difficulty. Use care to describe the job as such. All personalities should be eliminated from your consideration. This may sound as an unnecessary precaution, but if you don't check yourself often you will tend to describe the work being done by the present incumbent and this may differ considerably from the proper work distribution as you would like to have it or as indicated by good organization.

Lastly, as to ways of developing good organization and administration, I wish to refer to your *Minimum Standard for Pharmacies in Hospitals.* It seems to me that here is an excellent guide; brief and specific, yet broad enough to be adaptable to any hospital pharmacy situation. I should like to congratulate the group and individuals responsible and trust that very soon it will be approved and become an important contribution to the nation-wide effort as expressed by the American College of Surgeons, to ". . . promote better hospitalization in all its phases in order to give the patient the greatest benefits that medical science has to offer . . ." Here is a perfect example of the application of the psychologists' formula we spoke of a few minutes ago. On a national scale a new stimulus is being substituted for the old.

Finally, most of us like to have some sort of a measuring stick to apply to our accomplishments. If we try to develop and use some principles of departmental organization and administration, how do we know we are being successful? I would say there were several guideposts:

1. Your place in the institutional organization.
2. The ease or difficulty with which your requests and recommendations are accepted by your administrator.
3. Your acceptance by other department heads.
4. Does the professional staff seek and accept your suggestions and recommendations in pharmaceutical matters?
5. The minimum standard. Use it as a check list for your advancement.
6. Your own honest opinion.

Statler Accepts Post With Veterans Administration

Robert A. Statler, formerly chief pharmacist of the Veterans Administration hospital in Aspinwall, Pennsylvania has been appointed chief of the training section of V-A's pharmacy division in Washington, D. C., it was announced by E. Burns Geiger, chief of the V-A pharmacy division.

Mr. Statler replaces Dr. Charles Schwartz, who resigned to accept a professorship at Southwestern University, Weatherford, Oklahoma.

A native of Pittsburgh, Pennsylvania, Statler received his B.S. degree from the University of Pittsburgh in 1942, and became a registered pharmacist that same year.

He entered the Army in August, 1942, and remained on active duty for four years, receiving a discharge as a first lieutenant, Medical Service Corps, in July, 1946. Currently he holds a reserve commission in the Medical Service Corps.

After the war, Statler returned to prescription pharmacy in Pittsburgh. In February, 1947, he joined V-A as a pharmacist at its hospital in Butler, Pennsylvania. He transferred to the Aspinwall hospital as chief pharmacist in August, 1947, and remained there until he was called to Washington.

He is a member of the American Pharmaceutical Association, the American Society of Hospital pharmacists, president of the Western Pennsylvania Society of Hospital Pharmacists, and a member of the Committee on Pharmacists in Government Service of the A.S.H.P.

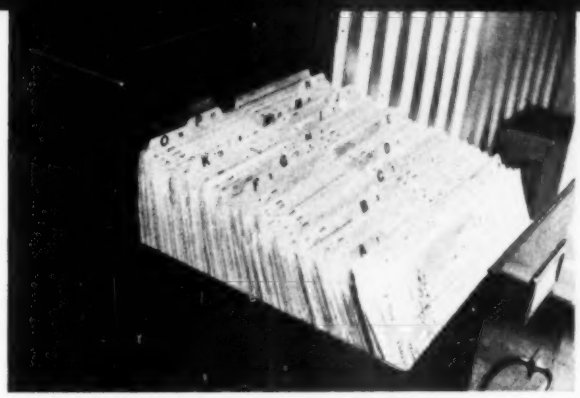
The pharmacy division's training section, of which Mr. Statler is chief, develops and establishes programs to keep V-A pharmacists abreast of modern trends in hospital pharmacy and therapy.

One important aspect of this program has been the attendance of V-A pharmacists at the annual Institute on Hospital Pharmacy conducted by the American Hospital Association, American Pharmaceutical Association and the American Society of Hospital Pharmacists. Twenty-three V-A pharmacists from hospitals located throughout the nation attended the Institute held in June at Ann Arbor, Michigan.

Future plans under consideration include establishment of internships at selected hospitals, in-service training programs and the issuance of an educational bulletin series.

FILE FOR PHARMACEUTICAL LITERATURE

By Claude L. Busick



A comprehensive file of pharmaceutical data is a necessity for hospital pharmacists. Such a file provides ready information when needed, saves time, and is a source of satisfaction to those maintaining the file for the use of others. I have received numerous requests for information for preparing such a file. I have prepared the following outline, for a Medical and Pharmaceutical Index Reference File. The equipment consists of

Two or four-drawer steel filing cabinets with separators.
Small 3 x 5 Card File with lid.
3 x 5 Index Cards and Index.
Index Cards with tabs. Letter size No. G-F No. 7465-25 with Alphabet Tabs.
100 Manila Folders Y & E No. 3404 T ½.
1 ream Mimeograph Paper buff, golden rod or blue. Size 8½ x 11.
Trimming Board.
1 Favorite Leatherette Expanding Vertical Cabinet Folder No. 62, size 9½ x 11¾ inches.
Scotch Tape.
Liquid glue or mucilage.

There are many different systems for filing detail material. I have endeavored to present the simplest way for quick reference.

The manila folders (Y & E No. 3404) are numbered from 1 to 100 and distributed through the letter file alphabetically (from A to Z) in proportion to the usage, i.e. divisions A B C M R S will need more folders than the other divisions of the alphabet. Having set up the filing space in this manner, next prepare the material you have collected for future reference, by mounting the leaflets and circulars on the mimeograph paper either with scotch tape or glue. The booklet type material is best fastened by scotch tape and will serve as a hinge for the pages, with more flexibility.

Try to group like items on the same page and file under the same letter of the alphabet. This is a time saving step. As you place these finished sheets into the filing cabinet index each item on the 3 x 5 index cards showing folder number, also sub-numbers if there are such.

By attaching all leaflets and booklets to the larger sheets it will discourage requests for removal from the file and will prevent material from falling to the bottom of the folder. More subjects can be filed per inch of space.

This material should be gone over at frequent intervals to insure only the latest therapeutic trends of medication. Limit the number of sheets per folder, adding efficiency to your file.

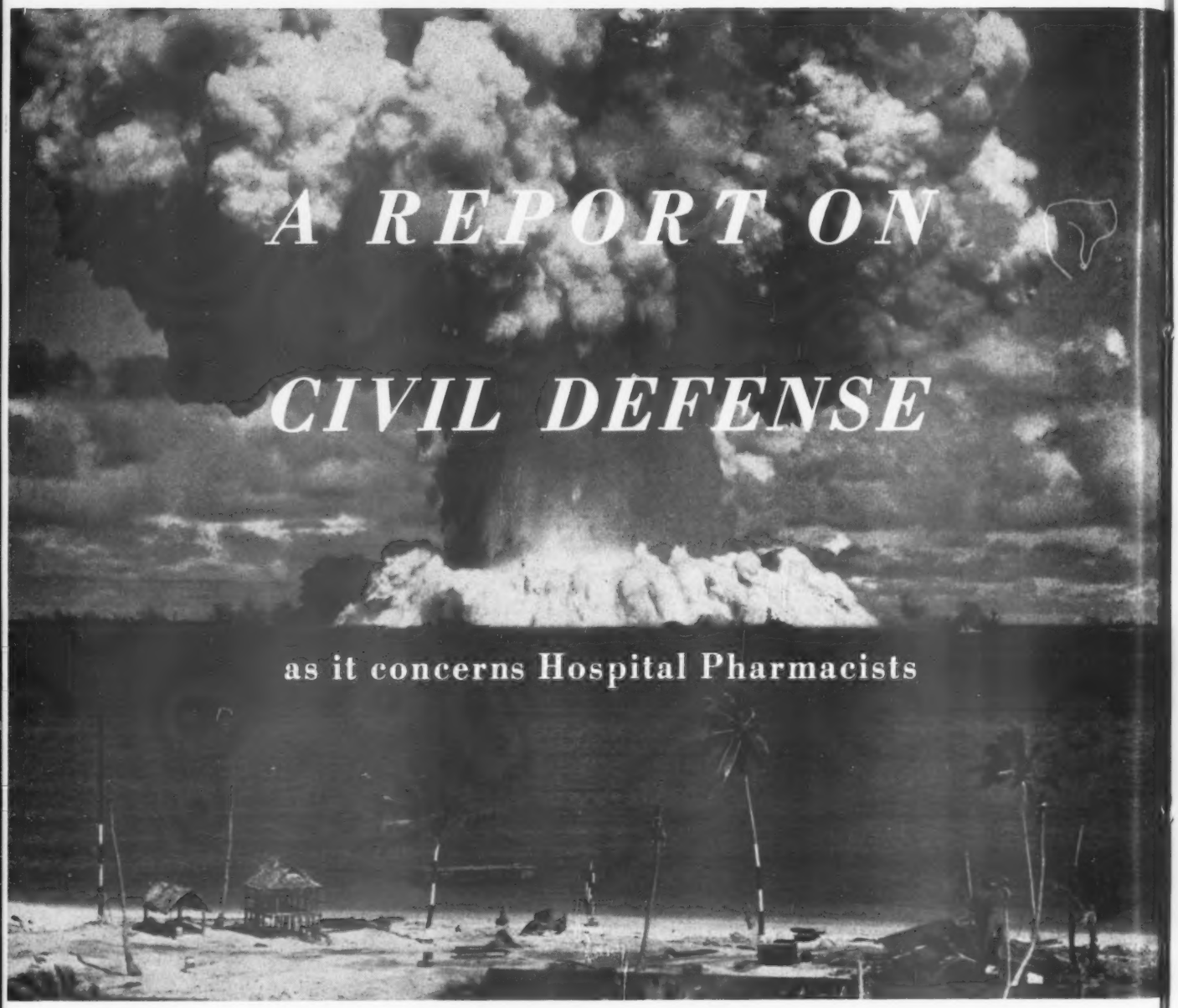
Use the Favorite Expanding Cabinet Folder for storage of current literature until it can be prepared for proper filing.

Price-Lists, Booklets and Pamphlets of the usual thickness should not be included in this file. Physicians are seldom interested in this class of pharmaceutical literature.

Cross indexing as to therapeutic use and indication is not essential in this type of information file and only causes complications and delay in keeping it up-to-date. The simpler you keep the system the more efficient it will be.

CLAUDE L. BUSICK is chief pharmacist at St. Joseph's Hospital, Stockton, Calif.

Presented at the Fourth Institute on Hospital Pharmacy, Berkeley, Calif., 1949.



A REPORT ON CIVIL DEFENSE

as it concerns Hospital Pharmacists

Consider the situation which has prompted the formation of a Civil Defense Committee in the American Society of Hospital Pharmacists. Here is a basis for the planning of the Medical and Health Preparedness Division: 50 per cent of the physicians, nurses and technical personnel in the attacked city are dead or wounded; all buildings including hospitals within one mile of the explosion center are destroyed or useless; fires have started at several sites; there are 8,000 fracture cases; 37,000 contusions, 23,000 lacerations, 33,000 radiant flash burns; 5,000 people are in severe shock; 500 pregnant women are delivering prematurely; 18,000 people will develop radiation sickness; 50,000 bed cases exist; 40,000 persons die the first day, 10,000 more during the first week, 5,000 more the second week and another 5,000 thereafter. Ten million dollars worth of bandages, drugs and other medical supplies are needed —25,000 pints of whole blood are needed the first day and 10,000 pints plus 100,000 pints of plasma are needed each week for three weeks. Hospital beds for 10 per cent of the population of the area are required. Perhaps several days later, the above catastrophe is repeated in a nearby area. No after-phase of atomic attack departs more from the conservative than the medical.

The preparedness problem is obviously a com-

plex one, necessarily requiring for it's solution, a breakdown of responsibility to specific functioning units. Hospital pharmacy must share a part of this responsibility.

Our committee's specialized objective lies in the promotion of service to be rendered by hospital pharmacists to help meet the tremendous drug demand created by an atomic disaster.

Our committee's problems will dwell upon the following:

1. Choice of drugs which would be most heavily in demand.
2. Procedures for drug stockpiling.
3. Methods and means for dispatching, dispensing and procuring emergency drugs.
4. A method to tie-in with local and state civil defense organization.

The central agency for all civil defense planning is the Office of Civil Defense of the National Security Resources Board in Washington, D.C. Every state is to proceed with preparedness plans on its own initiative. Under the master civil defense plan, federally purchased supplies will be located at strategic points about the country to supplement local stocks.

At the present writing, O.C.D. has not yet been separated from N.S.R.B., nor has it received an appropriation with which it may begin stock piling medical supplies. Medical supply manufacturers at present do not have enough supplies on hand for the planned stock piling and are not prone to increase production until the government presents a clearer picture of how much it will purchase.

In concurring with the presently informed progress of the National Civil Defense and with the knowledge that the results of a very extensive survey and study by the Medical and Health Preparedness Division is forthcoming in the form of a health manual, the Civil Defense Committee of the A.S.H.P. has nevertheless taken initiative in suggesting a limited set of recommendations for hospital pharmacists. Since the entire organization of disaster preparedness is in the "fitting together" stage, some of the offered suggestions may have to be altered in accordance with the more elaborate official manual soon to come. Some of the recommendations will be of basic value for more extensive development. At any rate, we are in this effort, by-passing a barrier of laxity which echoes with time worn phrases such as "plans are being formulated" and "the committee is laboring diligently."

The Civil Defense Committee of the A.S.H.P. has outlined the danger of being unprepared for an atom bomb attack and made specific suggestions whereby hospital pharmacists may contribute on local, state and national levels.

Prime interest is the protection of yourself, your family and personnel in the event of atomic attack. There are many publications available on the subject of protection and survival in atomic disaster.

FOR LAY READING

We Are Not Helpless—This is a series of non-technical articles, obtained from the *New York Times*, N.Y.C. Price 10c.

You and the Atomic Bomb—This is the New York State Civil Defense Commission, pamphlet No. 1, obtainable from Department E, *Life* Magazine, 9 Rockefeller Plaza, New York 20, N.Y . Price 10c.

Survival Under Atomic Attack—This is obtainable from the N.S.R.B., Government Printing Office, Washington 25, D.C.

How to Survive an Atomic Bomb—by Richard Gerstell, Ph.D., consultant, New York, N.S.R.B., Bantam Book, New York.

ADVANCED READING

The Effects of Atomic Weapons—Obtainable from the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D.C. (paper bound) Price $1.25.

Medical Aspects of Atomic Weapons—Obtainable from the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D.C. Price 10c.

United States Civil Defense—Obtainable from the U. S. Government Printing Office, Washington 25, D. C. Price 25c.

DRUG SUPPLIES

Assuming that whole blood and surgical textiles are usually stocked by other departments, heaviest demand from the hospital pharmacy will be for

The members of the Committee on Civil Defense are as follows: Ludwig Pesa, *chairman*, St. Mary's Hospital, Passaic, N.J.; Anna C. Richards, Mountainside Hospital, Montclair, N.J.; Jerome M. Yalon, University of California Hospital, San Francisco; George F. Archambault, Pharmacy Service, U. S. P. H. S., Washington, D.C.; Norman Baker, New York Hospital, New York City and Albert P. Lauve, Mercy Hospital, New Orleans.

the following:

Antibiotics and sulfonamides. Penicillin will be the antibiotic of greatest choice. The injectible repository form appears to be the most practical.

Plasma and plasma substitutes. It appears imperative that plasma subtitutes be included to supplement the supply of plasma. Intravenous gelatin 6 per cent, Dextran, a Swedish developed by-product of sugar, normal serum albumin and oral aqueous solutions of sodium chloride and sodium bicarbonate will help to fill the needs in shock therapy management.

Parenteral fluids. Intravenous fluids, if manufactured on the premises, pose the problem of possibly contaminated water supply or mechanical manufacturing failure. Ready availability from the large storage supplies of commercial producers should be arranged. The combination of procaine and dextrose as intravenous fluid may serve especially well in burn therapy for fluid control and analgesia.

Tetanus antitoxin. Penicillin and tetanus antitoxin will be used extensively in all treatment methods.

Burn Medications. It is evident that in planning for extensive burn treatment the accepted methods of the institution's therapeutics committee will guide the pharmacist in choice of drugs. The "closed dressing principle" which proved itself in the Cocoanut Grove disaster in 1942 will draw heavily upon surgical textile supplies. In the "exposure method" nothing is applied to the burn wound, but immobilization of the burned part is secured in some manner.

Other methods employ covering creams and ointments of sulfonamides and penicillin or plain sterile petrolatum gauze. Ointment mills and ample supplies of emollient creams, ointments and petrolatum, plus antibiotics and sulfonamides for incorporation are needed here.

The greatest number of thermal injuries resulting from atomic explosion may be flash burns resulting from the sudden heat traveling at the speed of light which is emitted at the time of the flash and explosion of the bomb. Severity will range from conditions similar to the common sunburn or blistering and severe pain, as in ordinary superficial burns, to even deeper thermal penetration (third degree) where sensory nerve endings are destroyed. These third degree burns, if extensive, will heal only with skin grafting. In addition to flash burns, there would be secondary burns, produced by flame damage and contact in escaping burning buildings.

Narcotics and barbiturates. Increasing narcotic inventories may induce shortage for other outstanding demands and it seems best to await guidance from the development of federal stock piles. Injectible narcotic solutions favor the nursing personnel for time and convenience. Syrettes or Ampins are to be considered. Barbiturates will be resorted to for control of hysteria, pain and anesthetic procedures.

Vitamins, hematinics and amino acids. Nutritional medication will be needed on a large scale, especially in burn therapy. High amino acid and carbohydrate feeding, both orally and intravenously, will be demanded. B-complex, hematinics, and vitamin C in high daily doses will be in order.

Germicidal solutions. Aqueous concentrates of the alkyl halides and newly developed non-caustic phenol and cresol derivatives will accelerate large scale manufacture of germicidal solutions.

OTHER PREPARATORY MEASURES

Establish standing orders for immediate shipment in case of disaster emergency with your drug wholesalers, pharmaceutical houses and Red Cross Chapter. We may look to federal drug storage depots to organize distribution of medical supplies. Discuss dispatching and procurement of supplies among hospital pharmacists of your local chapters of the A. S. H. P.

The community in which your hospital is located is preparing for civil defense as a unit in itself, as part of a statewide set-up and as part of a countrywide network. Consult the community and state directors to ascertain your part in this all out effort. A disaster relief committee may already be organized in your hospital. Get into the picture actively. You are needed.

A fallacy of many disaster relief committees is that they fail to acknowledge the possibility of reality and bask in the false security of a paper preparedness. Departmental personnel training is already beyond paperwork in many hospitals. Norman Baker, a committee member, conducts routine evening pharmacy staff seminars at New York Hospital in the study of atomic casualty preparedness. Another committee member, Jerome M. Yalon, has introduced me to the general plan for disaster relief of the University of California Medical Center. This plan is highly plausible for it's thoroughness and you will see it outlined in a future issue of THE BULLETIN.

An atom bomb may never fall on this country. We all join in this hope, yet we must accept organized preparedness as a necessity.

Respectfully submitted,
LUDWIG PESA, *Chairman*
Civil Defense Committee

THERAPEUTIC TRENDS

New trends in medicine and pharmacy include AUTONOMIC BLOCKING AGENT—AUREOTRACIN—ORAL CORTISONE—DEP AS ANTICONVULSANT—SIMPLASTIN IN PROTHROMBIN TIME

AUTONOMIC BLOCKING AGENT

A new autonomic ganglion blocking agent designated as SC-1950 was the most potent of a series of compounds recently tested in the laboratories of G. D. Searle and Company. The pharmacological properties of SC-1950 are described in an article appearing in the *J. Pharmacol. and Exp. Therap.* **99:**435 (August) 1950. Chemically, it is 2, 6-dimethyl-1, 1-diethyl piperidinium bromide.

In the experimental studies on animals SC-1950 averaged about five to seven times as effective as tetraethylammonium bromide in blocking the superior cervical (sympathetic) ganglion of the cat and the pelvic nerve (parasympathetic) ganglion of the dog. Data on the acute toxicity of SC-1950 for mice, rats and dogs are given.

AUREOTRACIN

Aureotracin is a combination of aureomycin and bacitracin in which the antibacterial properties of both are preserved. According to a study appearing in the *J. Am. Pharm. Assoc., Sci. Ed.,* **39:**483 (Sept.) 1950, aureotracin is less nephrotoxic than one would expect from its bacitracin content; it has activity against all the organisms ordinarily affected by aureomycin and bacitracin; it affords prolonged blood concentration when injected into the animal body; and it can be used with safety in man.

When studying the synergistic actions of antibacterial agents, it was noted that dilute solutions of aureomycin and bacitracin remained clear, but when more concentrated solutions were mixed in aqueous solution, a dense golden yellow precipitate formed rapidly. Collection of this precipitate and injection into experimentally infected animals showed that the antibacterial actvity of both antibiotics was retained. With the possibility that a new compound had been formed by the mixture of these two drugs, a small lot of the material was prepared and further studies made.

ANTICONVULSANT DEP

Preliminary pharmacologic studies on the anticonvulsant action of 2,2-diethyl 1,3-propanediol (DEP) and some of its homologues and esters are reported in the *J. Pharmacol. and Exp. Therap.* **100:**27 (Sept.) 1950. It was found that DEP, in doses which do not produce hypnotic or anesthetic action, possesses very strong antagonistic properties to the convulsant and lethal effects of pentamethylenetetrazol (Metrazol), strychnine and picrotoxin. DEP can be administered enterally or parenterally and the duration of action is short.

$$H_2COH—C(=C_2H_5)^2—H_2COH$$

CORTISONE ADMINISTERED ORALLY

Clinical effects of orally administered cortisone were comparable in all respects to those following parenteral administration of either cortisone or ACTH, according to a report in *Science* **112:**429 (Oct. 13) 1950. Tablets of cortisone, 100 mg. each, were administered to four patients with rheumatoid arthritis. The dose commonly employed for intramuscular injection was used orally, namely, 300 mg. the first day, 200 mg. the second, and 100 mg. daily thereafter. In two patients the dose was increased to 200 mg. daily, following a few days of 100 mg. dosage. All patients showed improvement following administration of the tablets. In two patients cortisone tablets were given for only 10 days; the patients improved significantly from the second day of treatment and relapsed promptly after cessation of the drug. The third and fourth patients received tablets of cortisone for longer periods, 20 and 19 days respectively. In each of these patients there was excellent clinical effect; the arthritic condition improved promptly and progressively, erythrocyte sedimentation rate was reduced to nearly normal, and general systemic improvement was gratifying. The third patient previously had received cortisone intramuscularly during two periods of 23 and 20 days, and ACTH for one period of 14 days.

The authors point out the advantages of administering cortisone orally, particularly as a means of practical therapy for patients with a chronic illness such as rheumatoid arthritis; however, they further emphasize the fact that abuse of such a potent hormone must be avoided.

Further studies of oral use of cortisone will be conducted as soon as supplies of the drug will

allow. Material for the experimental trials was supplied by Merck and Company.

TREATMENT FOR BRUCELLOSIS

Simultaneous use of aureomycin hydrochloride administered by the oral route and dihydrostreptomycin sulfate administered by the intramuscular route has proved effective in the treatment of brucellosis. Although this method which is described in the *J. Am. Med. Assoc.* 144:519 (Oct. 14) 1950, is not considered a specific means of treating brucellosis, the results to date are far superior to those obtained by any previously available method. The authors also state that the new method does not produce the undesirable toxic reactions at times encountered during the use of other methods in treating brucellosis.

According to the clinical report, 25 patients with culturally proved brucellosis were treated with the combination of oral aureomycin hydrochloride and intravenous dihydrostreptomycin sulfate. In addition, 10 patients who were acutely ill and who had unmistakable evidence of brucellosis, although blood cultures were not positive, have been treated. In the 35 cases there was one symptomatic relapse but not one single instance of bacteriologic relapse. The follow-up period in this group of cases extends from three to 19 months. Retreatment has not been necessary in any case.

TREATMENT OF LEPROSY

The following is an abstract of an article on "The Treatment of Leprosy," presented at the Conference on Leprosy, The New York Academy of Sciences, November 10 and 11, by Paul T. Erickson, U.S. Public Health Service, Lexington, Ky.

"The most important single therapeutic advance for leprosy occurred with the introduction of the sulfone drugs for the treatment of this disease in 1941. At the present time the sulfones have largely replaced chaulmoogra oil except in locations where the sulfones are not readily available and in the milder types of the disease. The sulfones, aided by the antibiotics, together with certain general measures for improving the resistance of the patient and caring for complications, have materially altered the outlook for the leprosy patient and the curability of the disease.

"Sulfone therapy is most effective on the specific skin and mucous membrane lesions. Nerve and eye complications are more resistant. Definite improvement is noted in lesions of the skin and mucous membranes in from six to twelve months. Although clinical improvement is progressive, sustained, and followed by a reduction of leprosy bacilli in the lesions, a complete disappearance of the bacilli usually requires extended treatment. Arrest of the disease is obtained, but relapse may occur unless administration of the sulfones is continued in reduced dosage.

"Dihydrostreptomycin treatment closely parallels that of the sulfones. Because of neurogenic toxic effects, such treatment cannot be continued sufficiently long to determine its ability to effect an arrest of the disease. It produces definite beneficial effects, however, and short courses of treatment are recommended as an adjunct to the sulfones in certain leprous conditions. Combined or alternating use of the sulfones and dihydrostreptomycin or of two or more sulfones is the treatment of choice.

"Among the experimental drugs used, aureomycin, *para*-aminosalicylic acid, and Tibione have shown early beneficial effects on leprous lesions. Tibione is considered to be the most promising drug outside the sulfone series for further clinical trial. Limited experience with cortisone has shown that it might be of value for the control of lepra reactions."

SIMPLASTIN FOR ESTIMATION OF PROTHROMBIN TIME

Simplastin provides a new type of thromboplastin for making estimations of prothrombin time. Clinical evaluation of this new preparation was first reported by Drs. Shepard Shapiro and Murray Weiner of the New York University College of Medicine. Since the death rate due to thromboembolism is high, use of the anticoagulant drugs has done much to reduce the mortality. However, the erratic action of the anticoagulants has discouraged their widest possible use. Due to this fact and the difficulty in establishing standard dosages, it is necessary to provide prothrombin time tests which show the clotting tendency of the patient's blood. The present method requires numerous laboratory steps to determine clotting time and many hospitals do not perform the prothrombin time determinations and therefore cannot safely employ anticoagulant therapy.

The new Simplastin procedure provides a superior test because it requires simply the addition of distilled water to be made ready for use. Since the test can be performed in 15 minutes using the Simplastin procedure, many hours of hospital staff time can be saved.

Simplastin was developed, according to Dr. Weiner's report, by the Research Department of the Chilcott Laboratories of Morris Plains, N.J.

TIMELY DRUGS

BEVIDOX CONCENTRATE DULCETS . . . are tablets containing 10 micrograms of vitamin B_{12} for use as a hematinic agent and for experimental use as a growth factor. Designed for administration to children, Bevidox Concentrate Dulcets are in the form of candy having a pleasant raspberry flavor. The recommended dosage as a growth factor is 10 micrograms daily and as a hematinic agent, 30 micrograms or more weekly, depending on the condition of the patient. Bevidox Dulcets are available in bottles of 100 from Abbott Laboratories.

* * *

B-FOLIDOX . . . are capsules containing Bevidox Concentrate equivalent to vitamin B_{12}, 25 micrograms, and folic acid, 1.7 mg. for use as a hematinic agent and as replacement therapy for vitamin B_{12} and folic acid deficiencies. B-Folidox capsules are supplied in bottles of 100 by Abbott Laboratories.

* * *

MUMPS VACCINE . . . is now available from Lederle Laboratories. This vaccine is designed primarily for the immunization of large groups of children or adults, housed together in close quarters, as in school groups, camps, institutions, or military installations, where a mass outbreak of mumps would cause serious inconvenience. It is, therefore not recommended for routine use in the prevention of mumps in childhood, inasmuch as it confers immunity for only about one year and annual revaccination is necessary. The vaccine is packaged in vials of 2 cc. and 10 cc., representing one and five immunization doses.

* * *

BIOSULFA . . . is a combination of crystalline penicillin G potassium, sulfadiazine, and sulfamerazine in tablet form. It is useful in the treatment of pneumonias, Vincent's angina, gonorrhea, follicular tonsillitis, mastoiditis, and other infections caused by organisms susceptible to penicillin and the sulfonamides. Clinical evidence has shown that the use of sulfonamides in combination with penicillin exerts an additive or synergistic antibacterial effect.

Tablets should be administered on a fasting stomach, not less than one-half hour before, or one and one-half hours after meals. The adult dose is four tablets initially followed by one or two tablets every four to six hours. The dosage for children should be worked out according to age. It should be noted that this preparation may cause severe toxic reactions and should be discontinued if signs of toxicity develop. Constant supervision of the patient is essential. Biosulfa is supplied by The Upjohn Company.

* * *

EDRISAL WITH CODEINE . . . is a combination of codeine sulfate, Benzedrine Sulfate (racemic amphetamine sulfate, S.K.F.), acetylsalicylic acid, and phenacetin available from Smith, Kline and French Laboratories. It is indicated for the relief of moderately severe painful conditions and is particularly effective in dysmenorrhea, early pain in malignancies, and following surgery or childbirth. Because it contains Benzedrine Sulfate, it offers the advantage of averting the undesirable depressant effect that codeine so often produces. The dosage of Edrisal with Codeine is one or two tablets repeated every three hours if necessary. It is contraindicated in patients sensitive to ephedrine-like compounds since it contains Benzedrine. It should be used with caution in patients with coronary disease or other cardiac conditions in which vasoconstrictors are contraindicated.

* * *

ESKACILLIN 100 . . . a liquid oral penicillin, is now available in the new Eskacillin containing 100,000 units of crystalline penicillin G per 5 cc. It has also been supplied as Eskacillin 50, each cc. containing 50,000 units of crystalline penicillin G. These preparations provide unusual palatability and ease of administration, and are therefore, most satisfactory for children. Each prescription is freshly compounded by mixing the penicillin tablets into the palatable aqueous vehicle. Unlike most extemporaneous "fruit syrup" mixtures, Eskacillin assures maximum stability. It is buffered to maintain its potency for at least seven days when kept in a refrigerator. Eskacillin 100 or Eskacillin 50 are available in 60 cc. bottles from Smith, Kline and French Laboratories.

CHLOR-TRIMETON MALEATE 8 MG. (Repeat Action Tablets) . . . is a specially coated antihistamine tablet designed to provide repeat action when longer effect from a single tablet is required. It is indicated for symptomatic relief of manifestations of allergic states, such as hay fever, vasomotor rhinitis, urticaria, allergic eczema, angioedema, serum sickness and drug sensitivity. Clinical trial is suggested in other conditions which may be relieved by the antihistamines. The 8 mg. buff coated tablets are supplied in bottles of 100 and 1,000 by Schering Corporation. Designed for administration to adults only, the dosage is one 8 mg. tablet at bedtime, or every 8 to 10 hours during the day. The repeat action is provided by two layers of Chlor-Trimeton maleate. Four mg. in the outside coating is intended to produce immediate symptomatic relief lasting about 4 to 6 hours, and a special inner coating is designed to release another 4 mg. in the core after about 3 to 6 hours.

* * *

NPH INSULIN . . . now available from Eli Lilly company and E. R. Squibb & Sons, provides an insulin preparation having improved characteristics of time action which are intermediate between the rapid but short effect of unmodified insulin and the delayed but prolonged action of protamine zinc insulin. It offers certain advantages in that more patients can now be controlled with one injection per day than was formerly possible. It may also be expected to obviate the need for making mixtures of protamine zinc insulin and unmodified insulin.

* * *

VASOXYL AND VASOXYL-P . . . are new vasopressor agents which produce a prompt and prolonged rise in blood pressure following parenteral administration. They are useful for maintaining blood pressure during operations under spinal anesthesia; they may also safely be used during general anesthesia.

Vasoxyl is Burroughs Wellcome's name for methoxamine hydrochloride in a sterile aqueous solution for parenteral use. The preparation known as Vasoxyl-P is methoxamine combined with one per cent procaine for use in facilitating administration of local anesthesia and intramuscular injection for pressor action as a single procedure. Vasoxyl-P prevents a fall in blood pressure so commonly encountered in spinal anesthesia. It is not a cerebral stimulant and does not produce tachycardia or cardiac arrhythmias even in the cyclopropane sensitized heart.

Both Vasoxyl and Vasoxyl-P are given by injection, the usual dosage being 10 to 15 mg. This may be given at the time of administering spinal anesthesia to prevent a fall in blood pressure. Since blood pressure is somewhat dependent on the level of anesthesia, dosage must be adjusted accordingly. Caution should be exercised to avoid overdosage so that undesirably high blood pressure or excessive bradycardia will not occur. High dosage may on occasion produce sustained, excessive blood pressure elevations with severe headache. The intravenous route should be reserved for emergencies where a strong immediate response is imperative, in which case not more than 10 mg. may be given slowly. Excessive dosage, especially intravenously, may produce headache, pilomotor response, a desire to void, and projectile vomiting.

* * *

OXSORBIL . . . is a choleretic agent available in capsules from Ives-Cameron Company, Inc., New York. Each capsule contains: dehydrocholic acid, 30 mg.; desoxycholic acid, 30 mg.; extract of ox bile, U.S.P., 60 mg.; sorbitan monoleate, 0.15 Gm.; and oleic acid, U.S.P. 0.175 Gm. Oxsorbil is supplied in bottles of 100 capsules.

* * *

OXONE . . . brand of 4-acetylaminobenzal-thiosemicarbazone (Tbl/698) is available *to qualified investigators* for experimental chemotherapy of tuberculosis. The recommended optimal daily dose is 0.1 to 0.3 Gm. In general, an initial dose of 50 mg. per day for one or two weeks with gradual increase to 200 mg. per day is suggested. Oxone is supplied by the Paramino Corporation, 162 East 86th St., New York, in five Gm. vials of the Tbl powder and tablets are available in the following sizes: 12.5 mg.; 25 mg.; and 50 mg.

* * *

HYTRONA . . . is a combination of the belladonna alkaloids and phenobarbital for use in the relief of certain spasmodic conditions. Each tablet contains: hyoscyamine hydrobromide, 0.1803 mg.; atropine sulfate, 0.0149 mg.; scopolamine hydrobromide, 0.0048 mg.; and phenobarbital, 16 mg. Hytrona is available from Pitman-Moore Co., Indianapolis in bottles of 100 and 1000.

* * *

SYLAMIN CREAM . . . (Salicylanilide-Octriphenate Cream, Abbott), for use in the treatment of tinea capitis and ringworm of the scalp is available from Abbott Laboratories in one ounce and one pound jars.

* * *

THROMBODENT DENTAL CONES . . . designed to accelerate firm clot formation and minimize infection following oral surgery, have recently been released by Sharp and Dohme, Inc. The dental cones each contain one unit of human

thrombin (sufficient to clot 1 cc. of normal blood in less than one minute), combined with 1 mg. of tyrothricin. They are administered topically by the dentist. Thombodent dental cones are available in bottles of 12 and 50.

AUREOMYCIN SOLUBLE TABLETS . . . contain 50 mg. of Aureomycin hydrochloride per tablet in a water-soluble base. This tablet is made especially for the convenience of the pharmacist in compounding either liquid or powder type Aureomycin preparations. The liquid preparations of Aureomycin are relatively unstable and should be stored in the refrigerator. The tablets as such need not be refrigerated. This preparation must not be used for the preparation of solutions for injection. Aureomycin tablets are compatible with "acid type" syrups and glycerin, but are incompatible with alkaline vehicles or those containing tannic acid, calcium salts, protein or amino acids. Preparations containing these tablets should be dispensed in quantities which will provide dosage for only three or four days. Aureomycin soluble tablets may be taken orally as tablets, dissolved in small amounts of water or added to small amounts of food.

PRONESTYL HYDROCHLORIDE . . . is procaine amide hydrochloride now available from Squibb. Since this new drug has been shown by clinical investigators to be effective and safe to use in abolishing certain irregular rhythms of the heart known as ventricular tachycardias, Pronestyl is believed to be valuable in the treatment of certain cardiac conditions. It is indicated for use in conscious patients, for the treatment of ventricular arrhythmias and during anesthesia, to correct cardiac arrhythmias. Its action is said to be probably due to a direct depressant action on the ventricular muscle.

This approach to treatment of certain heart conditions was developed after it became known that procaine, a drug used for local anesthesia, was effective when given by vein in abolishing the extra beats which frequently occur during operations under anesthesia. Procaine, however, is very quickly destroyed in the body and could not be used for the same purpose in conscious patients because it stimulated the brain violently, even giving rise to convulsions. The amide retains the property of abolishing the ventricular extra beats and the dangerous ventricular tachycardias but does not have the stimulating effect on the brain.

Pronestyl may be administered either orally or intravenously. The following dosage schedule is given:

In Conscious Patients—

For the treatment of ventricular tachycardia:

Orally: 0.25 to 0.5 Gm. (1 or 2 capsules) every four to six hours as indicated. In some patients, larger doses may be required.

Intravenously: 200–1000 mg. (2 to 10 cc. Pronestyl Hydrochloride Solution). Caution: Hypotension may occur during intravenous use in conscious patients. As a precautionary measure, administer over at least a 5-minute period. Electrocardiographic tracings should be made, if possible, during injection so that injection may be discontinued when tachycardia is interrupted. Blood pressure recordings should be made frequently during injection. If marked hypotension occurs, rate of injection should be slowed.

For the treatment of runs of ventricular extrasystoles:

Orally: 0.25 to 0.5 Gm. (1 or 2 capsules) every four to six hours as indicated. In some patients, larger doses may be required.

In Anesthesia—

During anesthesia, to correct ventricular arrhythmias:

Intravenously: 100–500 mg. (1 to 5 cc. Pronestyl Hydrochloride Solution). Hypotensive effects have not been observed when Pronestyl Hydrochloride Solution is given intravenously to anesthetized subjects; therefore, excessively slow administration is not necessary.

Side Effects—Oral administration of Pronestyl in doses of 3 to 6 Gm. per day, for periods of time varying from 2 days to 3 months produced no toxic effects as evidenced by studies of the blood count, urine, liver function, blood pressure, and electrocardiogram. Intravenous administration to patients without ventricular tachycardia produced only a moderate and transient hypotensive effect in about one-third of the subjects. However, during intravenous administration to patients with ventricular tachycardia, a striking hypotensive effect was almost invariably present. This disappeared concurrently with the establishment of a normal rhythm. Further studies are in progress to see whether the drug may be given intravenously over a period of time longer than five minutes so as to revert the ventricular tachycardia without causing hypotension. That this may be possible is indicated by the fact that some episodes of ventricular tachycardia have been successfully treated by oral administration without significant change in blood pressure. In about 10 per cent of the cases treated intravenously, certain electrocardiographic changes were produced: some diminution in the voltage of the QRS and T waves as well as some prolongation of the QRS and QT interval. The electrocardiographic changes were transient in all cases; disappearing within thirty minutes.

Pronestyl hydrochloride capsules, 0.25 gram, are available in bottles of 100 and 1,000. The solution, 100 mg. per cc., is available in 10 cc. vials.

the Veterans Administration

PHARMACIST

Edited by EDDIE WOLFE, *Mt. Alto Veterans Hospital, Washington, D.C.*

VETERANS ADMINISTRATION CENTER
PHARMACY DEPARTMENT
MARTINSBURG, WEST VIRGINIA

Pharmacy Staff Martinsburg, VA Center: Left to right, Mr. Charles U. Erdeljon, chief, Pharmacy Service; Mrs. Gladys Benson, assistant chief, graduated from the University of Texas in 1940, entered VA Service in 1946; Mr. Robert B. Sperry graduated from the Oregon State College in 1939, veteran of five years of service with the Armed Forces, 36 months overseas, entered service with the VA in 1946; Andrew M. Wilhoit, pharmacist helper. Below, A portion of the Pharmacy manufacturing laboratory.

By CHARLES U. ERDELJON

This Center is comprised of a 1000 bed general, medical, and surgical hospital and a 500 bed domiciliary home. The Pharmacy serves both of these services.

Upon assuming my duties as chief pharmacist, I was requested to work out the details for the construction of a new Pharmacy. The Pharmacy, prior to the new location, was very inadequate as it had one room 10 x 30 feet and a small storeroom about 9 x 8 feet. After submitting detailed plans to the Engineering Department of this Center, it prepared the final detailed plans which were forwarded to Washington for approval. The physical layout of the Pharmacy is broken down into four rooms: The main Pharmacy where the drug baskets and prescriptions are filled is a room about 34 x 48 feet, giving ample space. There is a small office about 9 x 8 feet off to the left of the main Pharmacy. The storeroom, where we store all our inflammable substances, narcotic safes, and 54-gallon drums of alcohol, is 15 x 15 feet and well ventilated. This room also has storage racks where most of our bulk items are stored.

Off the right side of the main Pharmacy we have a workroom, which is 12 x 12 feet. This room contains an electric still, one Hobart Kitchen Aid for mixing small amounts of ointments, a Day motor-driven ointment mill, and an Alsop high-speed mixer with removable cutting propellers and a studded beater. We use the propellers to mix the primers for oint-

CHARLES U. ERDELJON is chief of the Pharmacy Service, V. A. Center, Martinsburg, W. Va.

ments and the studded beater for mixing solutions, from five to fifty-four gallons at a time. We also use this mixer for large quantities of homogenized preparations and we also have a hand operated homogenizer. Another major manufacturing item is a Karl Kiefer mono-pad filter with a centrifugal electric motor-driven suction pump, which will filter such items as elixir of phenobarbital, elixir of terpin hydrate and other elixirs at a rate of five gallons per minute. In addition we have a hand operated suppository machine and various other routine equipment standard to the practice of pharmacy.

A new innovation incorporated at the time of construction of the Pharmacy was to place the ward baskets under the counter containing the tablets and facing another counter containing all the ampuls and intravenous solutions that the wards may need during the day. This enables greater speed in filling the baskets, as the pharmacist takes only a few steps at any time. We also inaugurated a system of prepackaging the most frequently used tablets, powders, and liquids in standardized bottles, enabling the pharmacist working on the baskets to easily supply the requsted medication without stopping to fill and label the item. The problem of storing the solution of green soap was solved by purchasing two porcelain wash tubs complete with stand for $17.45. They are neat in appearance and the glass jugs can be easily filled from the faucet attached to the tubs. Another item of interest was replacement of carboys which contained bulk manufacturing liquids by faucet fitted crocks. The crocks were obtained from the Depot and the Occupational Therapy Shop drilled the holes, so that the Engineering Department could fit the crock with faucets. We find that these crocks are more efficient, neater in appearance, and much easier to keep clean.

This is the left half of the main Pharmacy at Martinsburg VA Center. There are similar counters on the other side. The large porcelain containers in the foreground are used for the manufacture and storage of soap solutions.

Above, method of storing bulk liquids at Martinsburg VA Center Pharmacy. Note conveniently arranged faucets on storage crocks. Below, a view of the tablet and ward basket stalls. There is a similar counter, without the basket stalls, for the storage of drugs attached to the back of this counter. Items which are to be sent to the floors are prepacked and ready for instant dispensing.

as the president sees it

I. THOMAS REAMER
Duke Hospital, Durham, N.C.

Diabetes Week, as sponsored by the American Diabetes Association during the period of November 12 to 18 this year, was a good example of what can be accomplished by active teamwork of pharmacists and physicians. Hunter Kelly, chief pharmacist at Watts Hospital in our city, was appointed by the local medical group to arrange for the containers to be used during this detection period. He asked the local pharmacists to support the effort by paying for the containers and with help of local firemen, the distribution of more than 10,000 bottles to schools, stores and factories was accomplished. When the opportunity to be of service in your area presents itself, lend your wholehearted support. You will feel within yourself the rich reward of having performed a worthwhile service to your fellow-man.

MEMBERSHIP

One of the very pleasing things to me about the list of new members of our Society as reported in the last two issues of THE BULLETIN was the geographical distribution. There were 73 new members and they are from Canada, Hawaii and 25 different states representing every section of our country. We are growing in number at a steady pace and the distribution indicates a healthy trend. Congratulations to our Membership Committee—keep up the good work.

MINIMUM STANDARDS

I hope that all of you noticed the "Position Open" listed on page 296 of the last issue of the BULLETIN. The administrator wanted someone to operate his pharmacy according to the Minimum Standards. You might say that this was just another pebble on the beach, but if we collect enough pebbles we will have something of size and effectiveness. You can add more pebbles to our collection by reviewing the Minimum Standards; improve enough to surpass our minimum goal so that in a very few years standards will have to be raised even more than required to pass the test at this time.

INSTITUTE FOR 1951

The week of June 11th in New Orleans, La. is the answer to the time and place for the 1951 Institute on Hospital Pharmacy. Don Francke is chairman of the Institute Planning Committee whose function is to arrange the program. Miss Valerie Armbruster of Charity Hospital in New Orleans has been appointed chairman of the Local Planning Committee.

PLANNING AHEAD

I am trying to get my routine adjusted so that I may attend a meeting of our Committee on Narcotic Control at Lynn Hospital, Lynn, Mass. on Dec. 1. Chairman Arthur W. Dodds reports that Carl Brown, Sister Mary Berenice and Joseph Barry will be present.

We are also planning a meeting of our Executive and Policy Committees in Washington sometime in January.

As we approach the end of the calendar year, I am sharply reminded of the part the active committee members play in the growth and accomplishments of our Society. We are fortunate this year in having excellent committee personnel.

A Happy Holiday Season to all.

I. Thomas Reamer

President

A.S.H.P. AFFILIATES

The Wisconsin Society of Hospital Pharmacists met at St. Michael's Hospital, Milwaukee, on October 20 with Sister Mary Nicolene as hostess. The guest speaker was Sister Mary Regis, directress of the Outpatient Department at St. Michael's Hospital. As a recognized social worker and nurse, she spoke on "The Clinical Approach to Family Problems," pointing out that close cooperation with the pharmacy department is indispensable in rendering services to the patients.

During the business session, plans for the November 17 meeting to be held in Madison were discussed.

Dr. George Thomas, chief of the Department of Anesthesiology of the University of Pittsburgh spoke on "Newer Advances in Anesthesia" at the October meeting of the **Western Pennsylvania Society of Hospital Pharmacists.**

New officers of **The Greater New York Chapter of the American Society of Hospital Pharmacists** are: President, Sister Marie Patrick, St. Vincent's Hospital, New York; Vice-president, Sister M. Angeline, St. Mary's Hospital, Brooklyn; Corresponding Secretary, Sister M. Nicodema, St. Anthony's Hospital, Woodhaven; Recording Secretary, Sister M. Bernardine, Holy Family Hospital, Brooklyn; and Treasurer, Sister Cecilia Mary, New York Foundling Hospital, New York.

New officers of the **Association of Hospital Pharmacists of the Midwest** are: President Sister Mary Raphael, St. Vincent's Hospital, Sioux City; Vice-President Mrs. Ruth Kent, Lutheran Hospital, Omaha; Secretary Sister M. Carmelia, St. Joseph's Hospital, Omaha; and Treasurer Lillian Dorsey, Methodist Hospital, Omaha.

Installation of officers was held at the October 14 meeting at St. Joseph's Hospital in Omaha.

A two-day seminar was held by the **Louisiana Society of Hospital Pharmacists** on November 5 and 6 at the Jung Hotel in New Orleans. The following program was arranged by the committee with Mr. Herbert Mang serving as chairman:

"The Value of Hospital Insurances"—Mr. Raymond C. Wilson, assistant superintendent, Baptist Hospital, New Orleans.

"Introducing Hospital Pharmacy to the Pharmacy School"—Mr. C. J. Vance, assistant administrator and chief pharmacist, South Highlands Hospital, Birmingham, Ala.

"Radioisotopes as a New Weapon in the Physician's Armamentarium"—Dr. Ralph W. Brauer, assistant professor of Pharmacology, Louisiana State University, School of Medicine, New Orleans.

"The History and Relationship of Drug Products"—Mr. Paul Swender, chief pharmacist, Memorial Hospital, Houston, Texas.

"Bugs and Drugs—A Bacteriologist Views The Antibiotics"—Dr. George Valley, senior research bacteriologist, Bristol Laboratories, Inc., Syracuse, New York.

"A Dual Antispasmodic—Artane"—Dr. John Browning, associate director of Clinical Development, Lederle Laboratories Division, American Cyanamid Company, New Orleans.

"Electrolyte Ion Replacement Therapy"—Dr. Rowland Burns, chief resident, Touro Infimary, New Orleans.

"Preparation of Electrolyte Solutions"—Miss Frances Pizzolato, assistant chief pharmacist, Touro Infimary, New Orleans.

"Drug Charges and Credits in Hospitals"—Mr. Malcolm Claus, chief pharmacist, Baptist Hospital, New Orleans.

LEFT TO RIGHT: *Mr. C. J. Vance, assistant administrator and chief pharmacist, South Highlands Hospital, Birmingham, Ala.; Mr. Malcolm Claus, chief pharmacist, Baptist Hospital, New Orleans; Dr. John Browning, associate director of Clinical Development, Lederle Lab. Division, American Cynamid Co., New Orleans; Miss Valerie Armbruster, president, Lousiana Society of Hospital Pharmacists; Mr. Paul Swender, chief pharmacist, Memorial Hospital, Houston, Tex. and Dr. George Valley, senior research bacteriologist, Bristol Lab., Inc., Syracuse, N.Y.*

The **Illinois Chapter of the American Society of Hospital Pharmacists** met on October 10 at the Chicago Hospital Council. Mr. Louis Gdalman, a member of the Chicago Medical Civilian Defense Committee, reported on the progress in connection with the committee's activities. The speaker, Dr. Herbert Silverstone, Department of Cancer Research, Michael Reese Hospital, presented a talk on "The Effect of Caloric Restriction on Cancer."

New officers of the Illinois Chapter, elected to serve during the 1950-51 term are: President, Mrs. Mabel Kettering, Billings Hospital, University of Chicago; Vice-President, Mr. Malcolm Hutton, Presbyterian Hospital, Chicago; and Secretary-Treasurer, Mr. Louis Gdalman, Michael Reese Hospital, Chicago.

The **Arizona Society of Hospital Pharmacists** met on Sunday, October 2 at 2 P.M. at St. Joseph's Hospital in Phoenix. Mr. David Axelrod reported on a recent meeting of the Legislative Committee of the Arizona Pharmaceutical Association, stating that the Association is planning to submit a new pharmacy bill to the state legislature. The section of the bill on hospital pharmacy was discussed and it was decided that the Society's recommendations should be forwarded by the secretary to the Committee.

Mr. Rex West and Mr. Ray Wilson were appointed to represent the Society in the planning program for the 1951 convention of the Arizona Pharmaceutical Association.

Mr. West reported on the *Minimum Standard for Pharmacies in Hospitals* and it was suggested that all members study the standard.

"Annual Reports" was the subject presented by Mr. Elias Schlossberg in which he outlined what should be included in reports of the pharmacy department to the administration.

The **Northeastern New York Society of Hospital Pharmacists** held a luncheon meeting at the Ellis Hospital, Schenectady, on October 10. Highlighting the program was a talk on "Hospital Economics" by Dr. James E. Fish, administrator and medical director of Ellis Hospital. He discussed costs per-patient-day in relation to the average stay in hospitals. He outlined the following reasons for the rising costs, pointing out that this varies with the size of the hospital and the degree of departmentalization.

1. Inflation—decrease in purchasing dollar.
2. Operating expenses—75 per cent of the income goes for wages. It takes more than two employees for every occupied bed.
3. Bad debts and free service.
4. Replacement of obsolete equipment.
5. Necessity of stocking many new expensive drugs.
6. Need of increasing the personnel to do the work previously done by physicians, such as giving blood transfusions.
7. The rapid turnover—this is due to the improved methods of Surgery, Chemotherapy, use of blood in large quantities, and early ambulation.

Dr. Fish also emphasized the important role of the hospital pharmacist in advising and informing physicians of new trends in drug threapy.

Mr. Grover Bowles, vice-president of the A.S.H.P. and chief pharmacist at Strong Memorial Hospital in Rochester, reported on recent trends in hospital pharmacy.

The **Southern California Chapter of the American Society of Hospital Pharmacists** met at the Clinic Building of the Methodist Hospital in Los Angeles on September 13. Mrs. Z. B. Yates, assistant business administrator of Methodist Hospital Clinic was the principal speaker. She gave a short history of the hospital outlining the development and operation of the new clinic.

Committee chairmen reported on activities to date and changes in the constitution and by-laws were voted on. Mrs. Norma Phillips presented a review of the Ann Arbor institute which was held in June.

The **Cleveland Society of Hospital Pharmacists** met at St. John's Hospital for the first fall meeting on September 27. With 20 active members and four associate members and guests present, the meeting was presided over by the new president, Mrs. Evlyn Scott. Reports on the Ann Arbor institute were given by Mr. E. Paley and Mr. Paul Hanley. Mr. Charles Nevel reported on the convention of the American Hospital Association held in Atlantic City in September.

A film on "Electro-Narcosis Therapy of Mental Disorders" was shown by Mr. Gabriel Brown. Charges for Cortisone and ACTH by the Greater Cleveland Hospitals was the subject of a round table discussion led by Mr. Robert Stockhaus.

The October meeting of the Cleveland Society was held at St. Luke's Hospital. Speakers on the program included Dr. Elliott Weyer, Chas. Pfizer and Company who discussed "Antibiotics"; and Mr. W. Wargell who spoke on "What a Pharmacist Should Know in Case of Atomic Bomb Disaster."

During the business session, the president appointed a committee to determine how the Cleveland Society can participate in the convention of the Ohio State Pharmaceutical Association to be held in Cleveland, June 1951.

CURRENT LITERATURE

Edited by SISTER MARY ETHELDREDA, *St. Mary's Hospital, Brooklyn, N.Y.*

AMERICAN PROFESSIONAL PHARMACIST

SEPTEMBER, 1950—"Hospital Financial Control—Its Effect on Pharmacy Policies," by Jane Rogan, chief pharmacist, Evangelical Deaconess Hospital, Detroit, Michigan. A discussion of policies relating especially to purchasing of stock, salaries, patient charges, and equipment replacement or purchase, and the dependence upon the control of finances by the administration.

page 798

"An Open Letter to the Editor of *The Hospital Pharmacy Forum*," by Charles B. Barnett, chief pharmacist, St. Luke's Hospital, Jacksonville, Florida. A presentation of the methods of approach used in developing better professional relations with the Medical Staff and Nursing personnel.

page 802

OCTOBER, 1950—"Basic Considerations for the Pharmacist in a Sterile Solutions Program" by Francis J. Sullivan, chief pharmacist, Grace-New Haven Community Hospital, New Haven, Conn. A presentation of a joint one-day workshop meeting of the Massachusetts and Connecticut Societies of Hospital Pharmacists. A very thorough development of all points to be considered in a favorable program.

page 894

NOVEMBER, 1950—"Hospital Pharmacy Problems under Britain's National Health Service" by H. Alan Robinson. An English hospital pharmacist describes the organizational structure and conditions facing his profession under current conditions.

page 996

HOSPITALS

OCTOBER, 1950—"Elements of the Hospital Pharmacy" by the Division of Hospital Facilities, Public Health Service, Federal Security Agency. Presenting the revised suggested type plans for pharmacies in hospitals as prepared by the Division of Hospital Facilities of the Public Health Service with the collaboration of the Division of Hospital Pharmacy of the A. Ph. A. and the American Society of Hospital Pharmacists. The plans for 50-bed, 100-bed, and 200-bed general hospitals are presented and described in detail.

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HOSPITAL MANAGEMENT

OCTOBER, 1950—"Pharmacists Demand Clarification of Prescription Refilling Rule" by Robert P. Fischelis. An authoritative presentation of the problem in question regarding the recent dispute concerning the ruling of the Federal Food, Drug and Cosmetic Act.

page 92

NOVEMBER, 1950—"What ACTH is, What it Does as a Chemotherapeutic Tool" by J. A. Hubata, M.D. A brief presentation from a paper presented before the industrial nursing section of the National Safety Council.

page 92

MODERN HOSPITAL

NOVEMBER, 1950—"Successful Operation of the Pharmacy Depends upon Cooperation with Staff and Administration" by Paul G. Bjerke, chief pharmacist, Luther Hospital, Eau Claire, Wisconsin. Outlines the plan initiated at one institution in order to make the pharmacy more valuable to the physician and the institution.

page 100

"Procaine" by Henry H. Swain, B.S. and C. C. Pfeifer, M.D. Traces the mechanism of action of procaine and related drugs, the fate of these substances in the body, and methods of administration.

page 104

SOUTHERN HOSPITALS

JULY, 1950—"The Nurse and the Pharmacist," part II. Sister Florence, R.N., in this second section of her paper, continues her discussion of pharmacy technics and routines which affect nursing time, describing the advantages of prepackaging and preparation of ready-to-use medications by the Pharmacy and various other factors for the responsible pharmacist to consider.

page 49

OCTOBER, 1950—"Comparing Navy and Civilian Pharmacy" by Lewis R. Bevis, pharmacist, Tallahassee Memorial Hospital. A resume of a paper delivered at the annual meeting of the Southeastern Society of Hospital Pharmacists.

page 53

NOVEMBER, 1950—"Pharmacists Take to the Hills." A report on the annual mid-year meeting of the Southeastern Society of Hospital Pharmacists at Fontana Village, N.C. Contains an interesting summary of the discussion on Minimum Standards.

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NEWS ITEMS

Change in F.D.A. Refill Regulation Follows A.Ph.A. Appeal

A change in the Federal regulations which would permit the refilling of non-prescription legend drugs has been proposed by Oscar R. Ewing, Federal Security Administrator. This change would not permit the refilling of prescription legend drugs unless the physician indicates this may be done. Thirty days will be allowed for comment on the proposal, and final action will not be taken until objections have been considered.

This proposal follows a request to the F.D.A. by the American Pharmaceutical Association for a public hearing on the whole question of refilling prescriptions. Although the A.Ph.A.'s request for the hearing was denied, the F.D.A. has complied with the request for a regulation which would clarify the situation.

"I am convinced that there is confusion as to when a prescription may be refilled," Mr. Ewing said, "and clarification is plainly called for. The new regulation is intended to give pharmacists a clear understanding, so far as is possible, as to when a prescription may and may not be refilled.

"Drugs fall into two general classes," he explained, "prescription drugs and over-the-counter drugs. Some drugs are so potent or for some other reason are so dangerous that the regulations have for many years required the manufacturer to label them, 'Caution: To be dispensed only by or on the prescription of a physician.' To permit a layman, without a doctor's supervision, to use barbiturates, sulfa drugs, or thyroid, for example, would create a very serious danger to health. And if a doctor has prescribed a limited quantity of such a drug, there would be a like danger to health in permitting the prescription to be filled without the doctor's approval. The new regulation makes no relaxation in regard to these dangerous drugs. We will continue to press legal action against those few pharmacists who endanger their customers' lives by selling these toxic drugs without prescription or upon unauthorized refill."

"Over-the-counter drugs," Mr. Ewing continued, "are those that may be freely sold without prescription. It frequently happens that a doctor will prescribe a drug which the patient could buy without his prescription, and in that case the new regulation makes clear that if the pharmacist puts on the package the instruction indicated by the doctor he may omit the more complete directions for use which the law requires when there is no prescription. The regulation also makes clear that the same rules apply if the prescription is refilled, unless the doctor has expressly forbidden the refill, or unless the pharmacist is on notice that the refill may be dangerous. An example of this latter sort of case would be repeated refilling of a prescription for a drug carrying a warning that excessive continued use is dangerous to health."

1951 Dues Payments Due

Dues payments for calendar year members in the American Pharmaceutical Association and the American Society of Hospital Pharmacists are due. Mail your checks now to A.Ph.A. headquarters at 2215 Constitution Ave., N.W., Washington, D.C. Please send separate checks for the dues of each organization.

Hospital Standardization Program

Continuation of the American College of Surgeons' Hospital Standardization Program was recently favored unanimously by the regents of the college. Although the American Hospital Association, at its 1950 meeting, expressed interest in assuming responsibility for the program in cooperation with other organizations, the American Medical Association felt that such a plan would affect the standards of medical practice in hospitals. Believing that hospitals would be furthering their control over medical practices, the AMA ask that action be delayed. Thus, the decision of the American College of Surgeons is assurance that the Standardization Program will be continued although it does not preclude consideration of proposals for the participation of the interested organizations.

For the past 32 years the American College of Surgeons has sponsored the hospital standardization program without assistance from other organizations within the profession. Both the medical profession and the hospital group recognize the contribution made to American medicine by the College in an effort to provide better patient care.

Hospital pharmacy has become an important part of the standardization program although the first *Minimum Standard for Pharmacies in Hospitals* was not established until 1935. The new Standard, recently revised, is again being submitted to the American College of Surgeons for approval and allotment of points under the Point Rating System will be based on the new Standards.

Pharmacy Expanded—Greenwich Hospital

Included in the new Greenwich Hospital, Greenwich, Conn., will be a pharmacy department having a greatly expanded area and additional facilities. Frank Steele, chief pharmacist, is responsible for planning the new department. Located on the ground floor of the hospital, the pharmacy includes a dispensary, an office, a sterile solution room and storage space.

Directors of Health Information Foundation Meet

The Board of Directors of the Health Information Foundation held its first meeting in New York, September 19th. John G. Searle, chairman of the Board of the Foundation, told the directors that, "if we do our job correctly, we will become the clearing house for all things pertaining to information on health matters."

"We visualize ourselves as spearheading the enlightment of the people on this subject and as a consequence creating an ever-widening relationship and awakening to the fact that good health care can be obtained by everyone in every community if the people of that community will make the effort to obtain it."

"Inasmuch as health is our business it is perfectly logical," he said, "that we should take the lead in the health problems and do our best to furnish information regarding health methods and procedures so that the correct solutions to them can be found."

Admiral William H. P. Blandy, U.S.N. (Ret.), President of the Foundation, expressed belief that the Foundation is "making real strides forward in our program and we are now beginning to demonstrate progress in a tangible way."

Admiral Blandy disclosed that the Foundation's study of health insurance, "using committees of outstanding men in the Blue Cross, Blue Shield and private insurance fields," will be undertaken soon.

"It is my feeling," he said, "that the Foundation should try to determine the essential principles to be incorporated in all plans in order to meet public need. The purpose of this study will be to inform the public of the results, and to inform ourselves, possibly to make a contribution toward improving such shortcomings as may be found in existing plans."

Members of the Board of Directors of the Health Information Foundation, and officers and guests, who met Sept. 19, 1950 in New York City included, seated, (left to right) James J. Kerrigan, president, Merck & Co., Inc.; John E. McKeen, president, Charles Pfizer & Co., Inc.; Walter Beardsley, president, Miles Laboratories, Inc.; S. B. Penick, Sr., chairman of Board, S. B. Penick & Co.; Admiral W. H. P. Blandy, president, Health Information Foundation; Dr. Mark Heibert, executive vice president, Sterling Drug Co.; Earl S. Retter, vice president, Eli Lilly & Co.; John G. Searle, president, G. D. Searle & Co.; Carleton H. Palmer, chairman of Board, E. R. Squibb & Sons; Merle Sanders, president, Snyder's Drug Stores; Leslie D. Harrop, vice president, The Upjohn Company; W. L. Dempsey, president, Sharp & Dohme, Inc. Standing, (left to right) Stanley Resor, president, J. Walter Thompson Company; Dr. William A. McLean, Merck & Co., Inc.; Foster C. McGaw, president, American Hospital Supply Corp.; F. S. Dickinson, Jr., president, Becton, Dickinson & Co.; L. D. Barney, president, Hoffman-LaRoche, Inc.; Dr. Ernest H. Volwiler, president, Abbott Laboratories; George Van Gorder, president, McKesson & Robbins, Inc.; Dr. A. William Lescohier, president, Parke, Davis & Company; Norman H. Pritchard, Montgomery, Hart, Pritchard & Herriott; Ferdinand Eberstadt, F. Eberstadt & Co., Inc.; Kenneth Williamson, executive secretary, Health Information Foundation; Howard B. Fonda, Sr. vice-president, Burroughs Wellcome & Co., Inc.; Dr. Robert K. Cutter, president, Cutter Laboratories.

Commissions for Pharmacists in the Navy

Applications for commissions as Ensign in the Medical Service Corps (Pharmacy) of the *Regular Navy* may be made at any time by pharmacists between the ages of 21 and 32 holding the B. S. degree from an accredited College of Pharmacy and who are physically, mentally, morally and professionally qualified.

Though receipt of applications for commission in the *Naval Reserve* have been temporarily suspended, it is expected that this suspension will be lifted in late November, 1950.

New Medical Journal

Antibiotics is the name of a new medical journal which will be published for the first time in January, 1951, by the Washington Institute of Medicine. Dr. Henry Welch, who directs the antibiotics division of the Federal Food and Drug Administration, will be editor. He will be assisted by fifty internationally known authorities on the subject.

Films Available

Films available to hospitals through the American Hospital Association are listed in the October and November issues of *Hospitals*. Local chapters of the American Society of Hospital Pharmacists may be interested in securing films for meetings.

Hough to Dayton

Mr. Thomas E. Hough, a recent graduate of the Cincinnati College of Pharmacy, has joined the pharmacy staff at the Miami Valley Hospital, Dayton, Ohio. Mr. Dean Friesner is chief pharmacist.

Accepts New Position

Miss Hazel Menzie has recently accepted the position as chief pharmacist at the Burge Hospital in Springfield, Mo. Miss Menzie was assistant chief pharmacist at Strong Memorial Hospital in Rochester, N.Y., and prior to that time employed at the Buffalo General Hospital, Buffalo, N.Y.

Catholic Hospital Association

Announcement has been made that the Catholic Hospital Association will hold its 1951 convention in Philadelphia, June 2 to 5. The third annual Institute for Hospital Pharmacists sponsored by the Catholic Hospital Association will be held in conjunction with the convention with meetings being held May 31 to June 3.

Dr. Cadmus to North Carolina

Dr. Robert R. Cadmus, the American Hospital Association's representative on the Policy Committee of the Division of Hospital Pharmacy, recently became the director of the new teaching hospital at the University of North Carolina, Chapel Hill. He was formerly assistant director of the University Hospitals of Cleveland and prior to that time was director of the Vanderbilt Clinic of Presbyterian Hospital in New York City.

Subscriptions To The Bulletin

Subscription rates for THE BULLETIN OF THE AMERICAN SOCIETY OF HOSPITAL PHARMACISTS are as follows:

$4.50 per year for domestic prescriptions.

$0.75 for single copies, domestic.

$5.00 per year for foreign subscriptions.

$0.85 for single copies, foreign.

Requests for subscriptions may be forwarded to the Division of Hospital Pharmacy, 2215 Constitution Ave., N.W., Washington, D.C. Subscriptions for a period of one year may begin on either January 1 or July 1 and run for the following twelve months.

Moore to Head L.S.P.A.

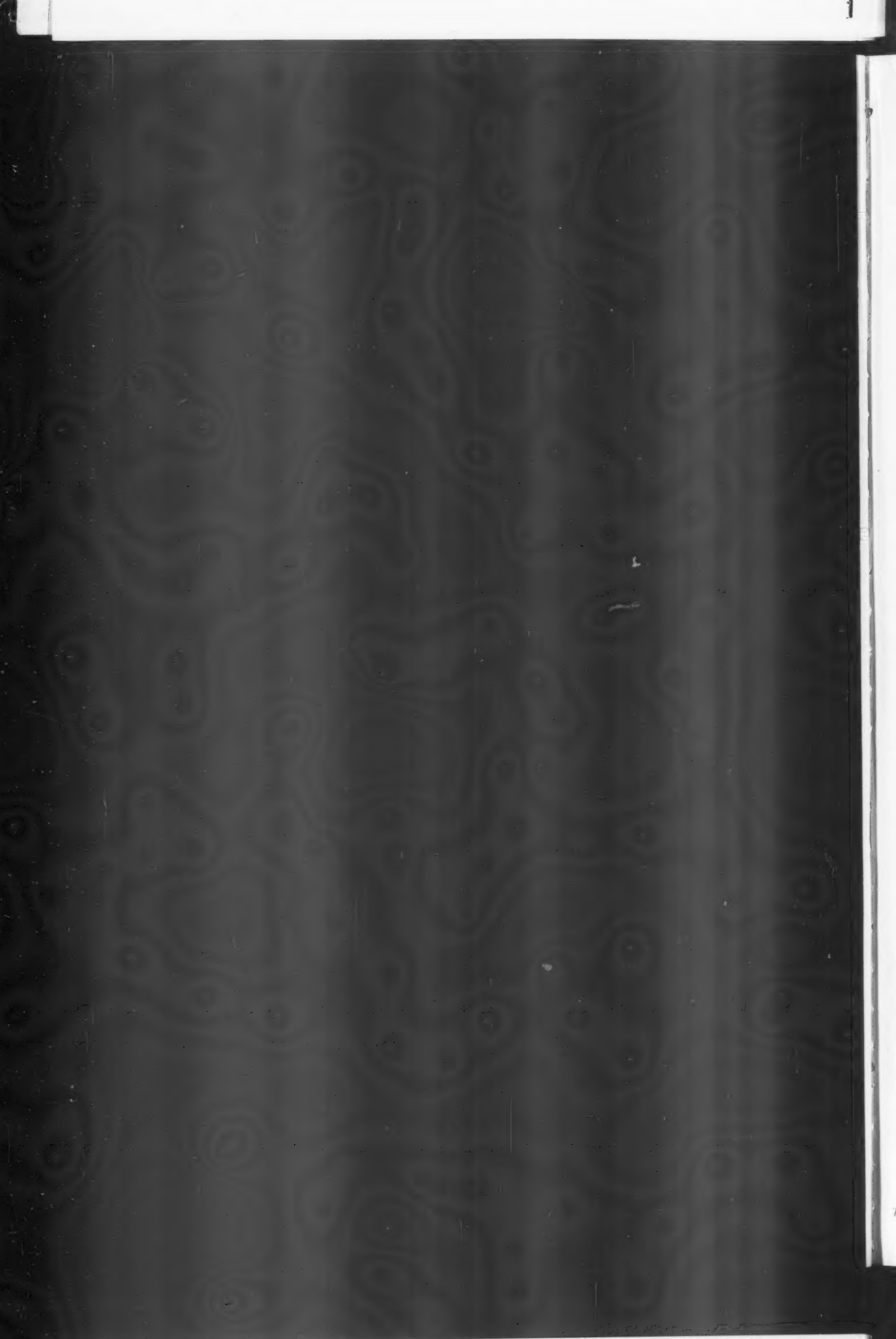
Mr. Albert H. Moore of Alexandria, Louisiana, has been elected president of the Louisiana State Pharmaceutical Association for the year 1951-52.

Mr. Moore is chief of the pharmacy service at the Veteran's Hospital in Alexandria. He is also chairman of the Committee on Examinations of the Louisiana Board of Pharmacy and is vice-president of the L.S.P.A. Mr. Moore has, for several years, been active in Louisiana pharmaceutical circles.

Correction

The formula for Benzocaine Anesthetic Ointment, twenty per cent, which appeared in the "Notes and Suggestions" column of the September-October issue of THE BULLETIN should have read as follows:

Benzocaine Powder	20.0 Gm.
Polyethylene Glycol 300	30.0 Gm.
Carbowax 4000	15.0 Gm.
Carbowax 1500	35.0 Gm.



POSITIONS IN HOSPITAL PHARMACY

POSITION OPEN

NORTHERN INDIANA CITY of 40,000 with 113 bed, open staff, general hospital. A $1,500,000 expansion program includes a large, new, centrally located pharmacy and bed capacity of 250. Ideal position in a progressive organization. Salary determined by experience and ability. Contact Mr. Emery K. Zimmerman, Administrator, Elkhart General Hospital, Elkhart, Indiana.

WISCONSIN . . . 270-bed hospital has immediate opening for woman hospital pharmacist. Address inquiries to Superintendent, Holy Family Hospital, Manitowoc, Wisconsin.

The following openings in hospital pharmacy appeared in the November issue of *Hospitals*. Anyone interested in the positions should write directly to the Agency indicated. A fee is charged when positions are secured through the services of a personnel agency.

PHARMACISTS—(a) Large general hospital located in leading city of United States dependency. (b) General 250-bed hospital operated by group clinic; university city. Midwest. H11-10 The Medical Bureau, Berneice Larson, Director, Palmolive Building, Chicago.

POSITIONS WANTED

NORTH CAROLINA . . . man, 54 years of age, registered in Pennsylvania, Maryland, Virginia and North Carolina, thirty years' experience in prescription duties desires position in hospital pharmacy. For further information kindly write to E. D. Ledbetter, P.O. Box 37, Lexington, North Carolina.

PENNSYLVANIA . . . man 26 years of age desires position in hospital pharmacy; is registered in Pennsylvania, has Bachelor of Science degree and two years' retail experience. For further information write Mr. S. Robert Filippino, 1039 Jackson, Philadelphia 48, Pennsylvania.

The following ad appeared in the November issue of *Hospital Management* on page 138: PHARMACIST: M.S. Degree; 10 years' experience. Mid-west or South. Well recommended. Contact Interstate Hospital and Personnel Bureau, 332 Bulkley Building, Cleveland, Ohio, Miss Elsie Dey, Director.

NEW MEMBERS

November 21, 1950

IDAHO
Whitby, Herbert L., 2314 Kootenai, Boise (A)

ILLINOIS
Lense, Howard E., 5544 S. Peoria, Chicago
Phillips, Lawrence A., 16736 Wood, Hazel Crest
Sister Alma Laurent, St. Clement's Hospital, Red Bud
Sister M. Vincentiana, 1423 Chicago Road, Chicago Heights

MARYLAND
Beck, Carl E., c/o Pharmacy, Johns Hopkins Hospital, Baltimore

MASSACHUSETTS
Bartlett, Shirley M., 347 Bedford Street, Lexington

MICHIGAN
Lutz, Jerrold W., 1468 Junction, Detroit
Parker, Paul F., 1523 South University, Ann Arbor

MISSOURI
Sister Mary Edwardine Gibbons, 2510 Linwood, Kansas City

NEBRASKA
Bogner, Isabel T., 2042 Lake Street, Lincoln (A)

NEW YORK
Capasso, Salvatore, 78 Livingston, Poughkeepsie
Marsh, George D., 187 Landing Avenue, Smithtown Branch

NORTH CAROLINA
Hardy, Rudolph W., 808 W. Markham Avenue, Durham

OHIO
Benet, Jonas J., 829 E. Mitchell, Cincinnati 29 (A)
Ejbl, Anthony B., 13001 N. Parkway, Garfield Heights
Hough, Thomas E., 848 Huron Avenue, Dayton

PENNSYLVANIA
Bogash, Robert, 602 Moore Street, Philadelphia 48
Lindsay, John S., Pharmacy Department, Jefferson Hospital, Philadelphia
Sister Mary Nomina Kordasz, N. Church Street, Hazelton
Stein, Joseph M., 1501 Asbury Place, Pittsburgh 17 (A)

CANADA
Lachance, Andre, 144 Cartier, Quebec (A)

MEMBERS DECEASED

Philip A. Crosby, 1010 Laguna Ave., Los Angeles, Calif.
December 24, 1949.

Archie Jones, State Hospital, Newberry, Mich.
October 5, 1950.

Francis Alexander Thomure, 106 N. Silver, Olney, Ill.
April 4, 1950.

Betty M. Pitts, 426—6th Ave., N., Grant Falls, Montana.
December 26, 1949.

Sister Mary Columba, North St., Harrison, N.Y.
July 10, 1950.

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